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THE NEW PURPOSE OF MEDICINE*

By Sir George Newman, G.B.E., K.C.B., M.D.,
LATE CHIEF MEDICAL OFFICER, MINISTRY OF HEALTH

The science of medicine as we think of it to-day has emerged slowly, since the dawn of human history, out of a vast and complex medley of human experience, social as well as medical. We, the practitioners of the healing art in one branch or another in the twentieth century, are the indirect descendants of magicians, astrologers, witch-doctors, and priests, and our formulated doctrines derive from primitive folk-medicine and its plant-lore, and from the superstitions, charms, and spells of the ancient world five thousand years before Christ. But we no longer seek guidance from the stars and comets; we do not believe that disease comes by caprice or is caused by evil spirits or angry deities; and we belong to a profession which have transmuted the herbalism, bone-setting, and rude surgery of former ages into a growing and ordered science and art. It is true that all through the centuries its emergence has been permeated, as now, by human fallibility, ignorance, and error, but the history of its advance is, with all its faults, the history of the discovery or application of certain fundamental principles leading to a fuller understanding of the nature of man, of disease and its causation, and of the ways and means by which disease can be controlled and man's survival on the earth made a little less insecure and more purposive. This has been accomplished by the arduous labours of a long line of diligent workers devoted to the search for truth and a way of life. Their journey has never been continuous and not always progressive; sometimes it has been isolated and individual, at other times it has been coöperative, winning the assent of the commonalty of men.

Let me at once commend to all students and practitioners of medicine the essential and invaluable study of this fascinating story of what Osler called "man's redemption of man," one of the greatest stories in the history of mankind, a story of high endeavour of man's mind to find out the secrets of nature and the means of their fuller discovery, interpretation, and use. The history of a science, according to Prof. Sudhoff, *is* the science, and without regard to history there can be nothing but confusion, misapprehension, and wasted effort in our undertakings.

When we recall the medical practitioner of the ancient world or of the Middle Ages, or even of the Renaissance of the fifteenth century, and contrast him and his profession with the practitioner of our own time, we shall be arrested by the reflection that we are living in a period in the history of man which is characterised by a profound change in the purpose of medicine amounting almost to a revolution. It is becoming more *communal* and *preventive*. Not only has there been an enormous advance in knowledge in all branches of medical science, greater in the last hundred years, let us remember, than in all the centuries which preceded them, but two other modern changes have altered the application of such knowledge. The State has also availed itself of such knowledge in the interest of the whole people; and the education of the people themselves has enabled them to appreciate the advantages of such knowledge. It is these three factors which have given the student of this generation a wholly new orientation.

THE MEDICAL CHANGES OF A CENTURY

Looking back a hundred years to 1835, the year of the passing of the Municipal Corporations Act which set agoing the practice of local government as we know it, we see a very different situation as compared with to-day. The principal medical events which brought England to the year of the great Reform Bill were significant. When, at the end of the fifteenth century, Linacre returned from his sojourn in Italy he was inspired with the idea of reviving English medicine with the Hippocratic learning of the Greeks; he began with the translation of the Greek masterpieces as represented in the writings of Galen; then he established Lectureships in Medicine at Oxford (Merton) and Cambridge (St. John's); lastly, he persuaded Henry VIII. in 1518 to found the Royal College of Physicians in London to introduce Greek Medicine and to regulate the practice of English Medicine. Subsequently the College issued the first official pharmacopœia for the authorisation and scrutiny of drugs used in medical practice. A century later, in 1616, Harvey announced to the College his discovery of the circulation of the blood which began modern physiology; Thomas Sydenham (sometimes called the Father of English medicine) introduced Hippocratic principles into his practice in London; lastly, there was the wonderful contribution of the medical practitioners of the eighteenth century. They studied and explored the circumstances of epidemic disease, introduced medical notification, advocated personal hygiene, initiated industrial welfare, reformed midwifery and the care of childhood, established dispensaries, hospitals, and medical schools, and gave to the world both John Hunter and Edward Jenner.

When therefore England reached the Reform period and the Municipal Corporations Act of 1835, English medicine was well established. But it expressed itself almost exclusively in private practice, and what was needed was (1) to bring its values into the national polity, and (2) to enhance those values. We have been the living witnesses of those two processes. We have seen at first a steady, and recently an extremely rapid, development of the services of the doctor to the nation, and parallel with it an almost incredible advance in medical knowledge. The first step was that the Poor Law Commission of 1834 at Edwin Chadwick's instigation employed medical men to explore the social and physical conditions of the poor. Chadwick's report on the sanitary condition of the labouring population became at once, and has remained ever since, an authoritative presentation of the medical aspects and needs of the social life of the people. It was followed by a long series of public inquiries and royal commissions in which medical men played a predominant part. In the result the State set up a central health authority (formerly the Local Government Board and now the Ministry of Health) and divided the country into sanitary districts, each governing itself on lines laid down by Parliament, and concerned with sanitation, water-supply, sewage disposal, housing, nuisances, the suppression of the causes of disease, food inspection, and the correct certification of sickness and death, which found expression in the Public Health Act of 1875 and four score of subsequent enactments.

* Inaugural address to the Welsh National School of Medicine, delivered at the Institute of Physiology, Cardiff, on Oct. 8th.

It is significant that as these Acts succeeded one another their contents became more personal, more direct, and more medical, so that to-day the public health services administered by the local authorities and their numerous medical officers are concerned, not only with the subjects of external environment already mentioned, but with health and disease—e.g., industrial welfare, maternity, infant welfare, the school medical service, the cleansing of persons Acts, the direct treatment of communal diseases (including fevers, tuberculosis, venereal disease, rheumatism, blindness, and lunacy), the provision of institutions (clinics, hospitals, sanatoria, special schools for defective children), a health and unemployment insurance system, medical research, the education of the people in health, international sanitary laws, and the *imposition of statutory duties on the medical profession in behalf of preventive medicine.* How great has been the expansion is indicated by the official report of the Treasury of the fact that in 1900 the nation spent 31 millions on public social services in England and Wales (education, public health, lunacy, poor relief), whilst in 1932, 30 years later, the nation spent 430 millions on these services (including insurance and pensions). Here is a gigantic scheme of national, social, and health enterprise for the welfare of the people, and with this scheme the medical profession is now intimately associated as adviser or agent.

The growth of medical science itself since 1835 is scarcely less impressive than the social and communal impulses which we have noted. There was the introduction of anæsthesia, the "death of pain" as it was called, followed by antiseptic surgery, the defeat of sepsis, hailed as two of the great discoveries of mankind. From 1845 to 1860 came the new knowledge from the labours of Helmholtz, Virchow, Claude Bernard, and Darwin. In that same period there were begun three series of investigations which have carried us whole leagues forward; Claude Bernard proclaimed the constancy of the internal environment of the body maintained by its circulating fluids, Du Bois Reymond opening up the problem of nervous regulation, and Addison that of endocrinology, and the three problems have been advanced and in part resolved in our own generation. There was the rise and rapid advance of bacteriology which opened the door to the work of Pasteur and Koch and their disciples, and in the last twenty years of the nineteenth century the discovery was announced of the bacillary cause of typhoid fever, septicæmia, tuberculosis, glanders, pneumonia, cholera, diphtheria, tetanus, meningitis, plague, and dysentery, and a little later came the spirochæte of syphilis. In 1895 came the unveiling of the body by the X ray; in 1898 Manson and Ross discovered the cause and vehicle of malaria; in 1900 the Curies isolated radium; and in the last thirty years we have seen that man himself is no longer the microcosm but the cell of which he is built is the unit. The cell, its content, its function, and its secretion, has become so vitally important that by its smallest deviation man's body may be profoundly changed, or even destroyed, by its own household. The advance of bacteriology has not only revealed the ætiology and viruses of infective processes but has opened the doors of immunology far wider than did Edward Jenner, providing us not only with vaccines and serums, but with diagnostic means of clinically estimating immunity. Physiologists and biochemists have eluciated the existence and character of the hormones in the body, finding their amazing power of control of the body to be second only to that of nervous regulation; and in the world of nature have similarly been disclosed the vitamins; and as a result, we are now furnished with chemical and biological means of treatment and prevention. In 1909 Ehrlich gave us salvarsan as the chemical answer to syphilis, and in 1922 Banting furnished insulin as the biological answer to diabetes, and to these must be added medication by thyroid, adrenaline, pituitrin, liver extract, &c. We have in three generations seen almost a *new body* unveiled for man, and have begun to learn how to control his life. Truly, we are living witnesses of what Sir Clifford Allbutt called "a new birth of medicine."

What does all this mean for us? It means that in our day the science and art of medicine has arrived at a new position of immeasurable gain and advantage as compared with the past. We can now become, if we will, fuller interpreters of Nature, the heralds and agents of powers of control of the body undreamed of by our forefathers. In a word, the new purpose of medicine is *the prevention of disease in the individual and the community, and the raising of the whole standard of physical life and human capacity.* Let me submit for your consideration three reflections.

I. THE MAINTENANCE OF HEALTH

First, the art of medicine must direct its energy and knowledge to the maintenance of health. One of the recent changes that has come over the teaching of medicine is the necessity of studying anatomy, physiology, and even biochemistry in the normal living body, for the cadaver cannot be a vital index. We know that disease is a disharmony of the living body, its discomfort and dis-ease, its reaction to the constant internal environment of Claude Bernard and to the variable external environment which surrounds us—soil, air, water, climate, occupation, habits, and the agents of infection. One of the great lessons of the Greeks was that the body itself could often harmonise its disharmony, provided it could function normally. Now the normal body requires two natural conditions for its survival, functioning, and health—viz.: *nutriment* in the form of oxygen and nutritious food, and effectual *exercise* of all its parts and faculties. From the earliest times, however, the custom and education of the medical man has concentrated on morbidity, and this was reasonable as disease is the enemy of health. But it is not the only enemy, not the only criterion or agency of disharmony. There may be physiological disharmony. My submission is that doctors should enlarge the narrow purpose of directing their almost exclusive attention to morbid conditions and the remedy of such conditions mainly by means of drugs. Unfortunately this tendency in professional custom has misled public opinion, and the patient himself becomes accustomed to think in terms of disease and of drugs. Hence, there has arisen a pernicious and false reliance on the "bottle of medicine" or its proprietary patents. Literally, millions of pounds are being thus expended; in 1934 57 million prescriptions were issued under the Health Insurance Act. Drugs are sometimes necessary and a pharmacopœia is required. But medication by drugs is, like patriotism, not enough (or easily too much), and we must not lose our way in this direction, or surrender our common sense and neglect our new knowledge and better methods. If I may say so, the widespreading fetish of quackery in its manifold forms may be partly due to the unconscious misdirection of doctors themselves. People are beginning to feel that they need something more than the doctors are giving them and therefore look elsewhere.

Thus a reaction is setting in. On all sides the community is begging for instruction and guidance from the medical profession as to *health*, something much larger than the negation of disease. On scientific grounds we know the common sense of this demand, and we should do wisely to meet it more fully. We know it is sound, because health of body means increase of capacity, physical and mental, for work and for the enjoyment of life; it means a stronger and better population, now and in the future; it means increased power to resist or overcome disease; and it means the prolongation of life and the postponement of death. I should like to see two things happen. First, that in every medical school there should be definite and skilled instruction in the applied physiology of the *nutrition* of the body (including dietetics), of ways and means of the effective *oxygenation* of the body, of *assessment of fitness*, physique, and capacity, and of all forms of *physical education*. This would encourage both the doctors and their patients in the new orientation of medicine. In some medical schools this is already undertaken, but it should be universal, and taken in hand by a clinical physiologist. Secondly, that every medical practitioner should actually include the practice of this form of clinical medicine. Mark this fact, *every patient needs health guidance*. Directly or by implication every patient, coming for the first time to his doctor, asks these four questions: "What is the matter with me; can you cure it; how long shall I have it; how can I avoid getting it again?" Here is diagnosis, treatment, prognosis, prevention. Each of these questions is of importance to the patient, but I invite you to consider the vast realm of medicine, and of invaluable service to the patient, which opens before you in providing a correct answer to the fourth question. In passing, you will observe that the patient, following his primitive ancestors, thinks of his malady as "it," something separate from himself an entity, an unlucky acquisition. But as we all know his malady is himself, a personal disharmony of his total ego. Disease is rarely singular, and perhaps never an entity. It is the man himself, his heredity, temperament, habits, way of life, perhaps even his religion, that is your patient.

Does the average busy practitioner actually advise upon or prescribe for the patient's way of life, his ineffectual use of diet (food and drink), fresh air, exercise, and rest? Has the doctor carefully considered the *physiological effect* of these five factors on his patient, on his heart, lungs, stomach, kidneys, on his nervous system, or his endocrine glands? Does he really answer the patient's fourth question, or does he evade it? Does not part, or the whole, of the patient's malady lie quite beyond medication by drugs? Is it not expedient that the patient, and indeed the normal person, should be able to obtain sound advice on health from the medical profession? Should not every practitioner be a missionary of health and prevention, a doctor and *teacher* of his patients in the true sense? It is certain that he could do more good in five minutes with his patient than any other educational agency, formal lectures, text-books, or Acts of Parliament. In a word, I have been long convinced that medical practitioners ought to be, and often are, the first effective teachers of hygiene to a people, the principal interpreters of preventive medicine in England, for through their hands pass one-third of the whole population every year.

II. THE STATE AND THE DOCTOR

This leads me to my second reflection. As the nation has found by experience that the medical profession is an invaluable ally in its schemes of governance, so it has increased its obligation upon them to serve the nation in preventive medicine. It began under the Tudors in 1511; by the Poor Law of 1601 the "parish doctor" was called upon to render medical relief to the statutory poor; and in the eighteenth century the State sought the advice of medical men in behalf of the national health. In 1838 the Poor Law Commission employed medical men to investigate the incidence and causes of fevers and other diseases, which were creating destitution; and in 1840 for public vaccination. A few years later came the appointment by local authorities of medical officers of health. From that time to the present, Acts of Parliament have greatly increased the statutory duties of registered medical men in respect of preventive medicine. They are required by law (1) to certify births, deaths and the causes of death; (2) to certify the occurrence of the major infectious diseases; (3) to certify cases of industrial poisoning; (4) to certify the existence of verminous children; (5) to observe the regulations affecting the issue and dispensing of prescriptions containing dangerous drugs; and (6) to give medical assistance in emergency at the request of a midwife. These obligations are made compulsory by the State on the assumption that every registered medical man is *competent* to determine the cause of death, able to diagnose all forms of infectious disease and industrial poisoning, knows the requirements of the Dangerous Drugs Acts, and is skilled in the diagnosis and treatment of obstetrical complications. Each of the six has preventive medicine in view. To these six must be added a number of corresponding liabilities. Any registered medical man may be called upon under Act of Parliament to vaccinate against small-pox, to act as a school doctor, a medical officer of health, or a medical officer for tuberculosis or venereal disease, to diagnose all forms of mental disease or deficiency, to certify and define public nuisances, to furnish factory and workmen's compensation certificates, and to provide on demand medical treatment for Poor Law or insurance patients. Again, most of these potential duties are preventive in purpose.

One of the most effective means of preventive medicine is the national health insurance scheme. This is a coöperative organisation between insured persons, the friendly societies, the medical profession, and the Government, especially designed for "insurance against loss of health, and the prevention and cure of sickness." The scheme is preventive in aim, and is proving to be so in practice; it is controlled by medical and lay coöperation, the greatest scheme of medical collective responsibility yet tried in Britain. Consider what is happening. Sixteen thousand doctors (some 70 per cent. of the medical practitioners in England and Wales) have agreed to accept their right (which they need not exercise), under the Act to give *preventive* and curative advice and treatment to sixteen million insured persons. The doctor is paid for each person on his panel, whether he becomes a patient or not; the patient has free choice of his doctor, and may come at the very beginning of his sickness, without let or hindrance, undeterred by any question of fee; the doctor's duty is to diagnose and treat the illness, the facts of which must be recorded by him; he inquires as to causation, because it pays him best for his client *not* to be ill; he must estimate resultant incapacity, because that is necessarily the basis of benefit; and he must treat effectively, for a dissatisfied patient changes his doctor. There is some imperfect work

no doubt and some complaints (as in all medical practice) in a scheme so vast though as yet incomplete, but taken as a whole this system provides medical services for half the adult population of the realm—and infinitely better than under the former "club" practice—and there need be no doubt whatever as to its preventive value.

Here are quoted a score of Acts of Parliament with as many amending Acts, most of them dealing with clinical duties and all of them designed not to control the form or character of the treatment of disease, but to ensure its *prevention*. In 1933 (the latest year for which figures are available) there were certified by medical men upwards of 330,000 cases of infectious disease, the cause of 496,000 deaths, and seven or eight million insurance patients as to "incapacity" and claims for benefit. Of this third group there were referred back to the Ministry of Health by approved societies and insurance practitioners 540,000 cases for decision or consultation, a very significant figure. Upon this national system of correct medical registration of sickness, prognosis, and death depends the fabric and effectiveness of the public health service of England and Wales. Innumerable difficulties and dislocations of public welfare follow in the train of inaccurate diagnosis of sickness, mistaken assessment of physical fitness, or the incorrect certification of the causes of death.

III. NEED FOR MORE PREVENTIVE MEDICINE

The last reflection I submit for your consideration is this. Although the death-rates in this country are exceptionally low, and lower than in most countries of the world, and the national health has steadily improved and stands higher to-day than at any previous time in our history, and although England has banished leprosy, plague, cholera, epidemic enteritis, endemic scurvy, typhus, and other scourges, and although the nation is spending lavishly on social welfare, there is still great need for further progress in preventive medicine and its research. We have as a nation by no means solved all our health problems, and our industrial and social evolution seems to bring new ones. The physique of children, although improving, leaves much to be desired, and that of youths from 14 to 18 years of age shows some signs of actual deterioration in certain districts; nutrition has steadily improved, but is still very unsatisfactory in some groups of the population; the common cold, bronchitis, and dyspepsia continue prevalent, costly, and disabling, yet all three are among the most preventable of maladies; influenza, "rheumatism," and cancer remain undefeated, and diseases of the heart and circulation claim 130,000 lives a year (much the highest certified cause of death); maternal mortality remains static at about 1 death in 200 mothers confined and shows as yet no reduction; the dental condition of the people is very much below par and results in unfortunate sequelæ; and too much attendance upon the sick is directed merely to drugs and ineffectual advice rather than to personal hygiene and a sound way of living. It must be added that the burden of incapacitating sickness and accident continues to be unduly heavy, costs the nation annually millions of pounds, and deprives industry of many thousands of years of lost time from work—in 1933, 29 million weeks were thus lost. The great bulk of this current sickness and accident is directly preventable by a sensible, intelligent, and civilised people, but it is not prevented. These are serious facts for the consideration of the profession. We cannot ensure a healthy nation only by "bottles of medicine," modern surgery, and artificial immunisation. A fuller and deeper appreciation of positive and constructive health is necessary.

In the light of these facts I venture to hope that the medical profession will steadily continue to close its ranks and work together as one body for the unity of medicine. It has in practice two aspects or wings, curative and preventive, between which there is now no call whatever for any sort or degree of conflict or competition. They are complementary and belong to each other, as the wings of a bird. *They need each other, and the community needs both.* Moreover, the medical practitioner is the outpost of both. We must *use* the new knowledge so rapidly extending in order to serve the national health. In doing so, we should remember that the social, æsthetic, psychological, and religious aspects of man's health or wholeness cannot wisely be disregarded. They form an integral part in the formation of those common standards of aspiration, discipline and conduct, so greatly needed by the nation to-day, and so essential to national health. Among such standards, to be accepted by the public and to be vigorously supported by the medical profession, none seem to me to be more vitally important than the urgent national need for the physical and health education of youth. Some other nations are rapidly providing this by order of Government. If we in Britain do not thus provide it by Act of Parliament the obligation upon our voluntary service is all the greater.

CONGENITAL AND RECURRENT DISLOCATION OF THE PATELLA

TREATED BY TRANSPLANTATION OF THE PATELLAR TENDON

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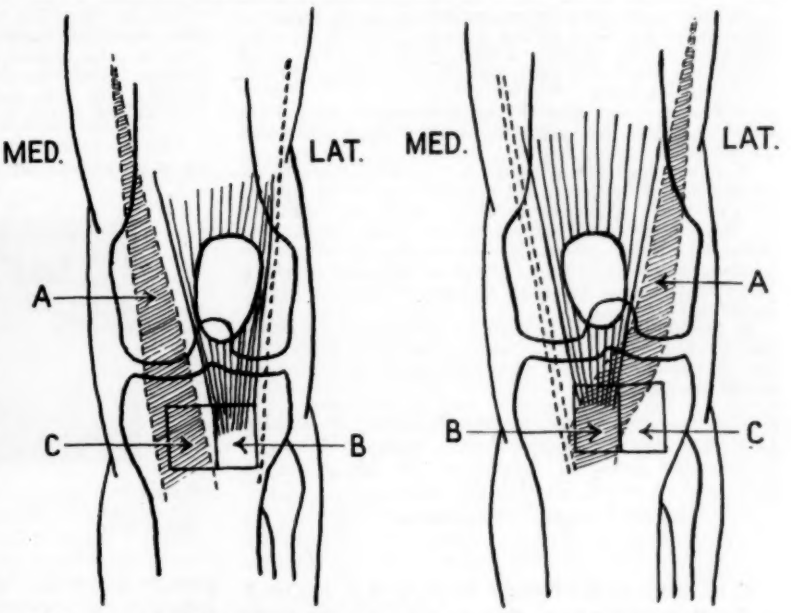
Among patients presenting themselves on account of mechanical defects of the knee-joint a small group is found to be due to malpositions of the patella. The most common is that known as "slipping patella," in which recurrent dislocation occurs, almost always on to the external femoral condyle, when the knee is fully extended. There is rarely any difficulty in reducing such dislocations, but the frequency of the occurrence results in a serious disability which needs some sort of operative measures for its relief.

Less commonly the dislocation is a permanent one, the patella occupying a position on the outer side of the external condyle of the femur, from which it cannot be manipulated into the intercondylar groove. In association with this defect a varying number of other deformities are usually present in and around the knee-joint. Such are a subnormal development of the prominence of the external condyle of the femur; insertion of the patellar tendon into the lateral aspect of the upper part of the shaft of the tibia; absence of the normal projection of the tubercle of the tibia; and varying degrees of dystrophy of the patella itself, amounting in extreme cases to complete absence of this bone.

Permanent dislocation of the patella, with or without dystrophy, is not attended by recurrent disablement as is a "slipping patella," and is indeed compatible with a surprising degree of efficiency of the knee-joint. Nevertheless appreciable loss of power of extending the knee-joint, together with persistent pain, presumably due to the abnormal stresses to which such a joint is subjected, are

sufficiently embarrassing to the patient to justify operative treatment, if something like normal function can thereby be obtained. That this is indeed possible by means of a relatively simple operation is shown by the case (No. 1) reported below.

There can be little doubt that the deformities which we are considering are of congenital origin. In a considerable number of the recorded cases the condition appeared to be hereditary, being recognised in several generations of the same family.[1 2 3] The interesting suggestion was made by Malkin [4] that congenital dislocation of the patella might be considered to arise as a consequence of the adoption of the erect posture by man. Man alone stands with the knees fully extended. In order that the tibiæ shall be close together and parallel in this position, the inward inclination of the femora, making their axes converge toward the knees, is neutralised by the tibiæ being set at a slight obtuse angle outwards with the femora. This angle, as is well known, disappears when the knees are flexed. The quadriceps muscle, with its insertion via the patellar tendon, shares in this angular conformity of the limb, and in full extension winds outwards around the projecting anterior surface of the external condyle of the femur, as around a pulley.



FIGS. 1 and 2.—Illustrating the operation of transplantation of the patellar tendon.

Malkin draws attention to the fact that in the sheep and the ox, which walk with bent knees, the internal condyle of the femur is more prominent than the external, that in the gorilla the two condyles are approximately equal, and that in man alone is the external condyle the more prominent. He supposes that a subnormal development of the external condyle would, at the first full extension of the knee-joint, allow the patella to slip laterally out of the intercondylar notch on the external aspect of the femur, where it is subsequently found in cases of congenital dislocation.

FIG. 3.—Photograph of knees before operation, showing position of small laterally placed patella (Figs. 3 to 6 illustrate Case 1).

TREATMENT

Various methods of operative treatment have been advocated for dealing with dislocation of the patella. The operation which has given uniformly successful results in the cases here reported is based on the principle of displacing the insertion of the patellar tendon to a more medial position on the tibia, so giving a new line of direction to the quadriceps muscle and patellar tendon. The patella is thus brought permanently between the femoral condyles. At the same time a pedicle graft is taken from the inner side of the joint capsule and transplanted into the outer side of the capsule. The resulting narrowing of the inner side of the capsule serves to anchor the patella in its new position.

The essential steps of the operation may be summarised thus:

1. An incision is made along the outer side of the knee, curving inwards at the lower end.

2. The skin and subcutaneous tissue are reflected off the front of the knee-joint.

3. The patellar tendon is defined, and separated from the rest of the capsule by medial and lateral incisions which open the knee-joint. On the medial side, a Λ-shaped strip of capsule and synovial membrane (Fig. 1A) is isolated, and left attached by its base to the front of the tibia.

4. A square of bone (B), which includes the insertion of the patellar tendon, is lifted by saw and chisel cuts from the front of the tibia.

5. A second square (C), of exactly similar size, is removed from the front of the tibia immediately medial to the first one (B).

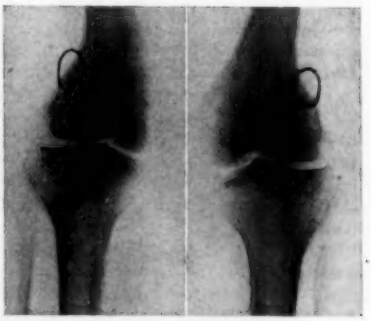


FIG. 4.—Radiogram of knees before operation. The shadow of the small laterally placed patella has been outlined for greater clearness.

6. The squares of bone are replaced so as to transpose their positions, thus giving a more medially situated insertion to the patellar tendon (Fig. 2). The secure wedging in position of these two squares of bone obviates the use of any screws.

7. The opening thus left in the medial side of the capsule of the knee-joint is closed with a continuous catgut suture.

8. The Λ-shaped strip of capsule (A) is swung over to the lateral side of the joint, and sutured so as to fill the gap on that side. The last two steps result in a reduction of the width of the capsule on the medial side. The Λ-shaped strip (A) crosses the new insertion of the patellar tendon, and as it is here sutured to the aponeurosis, it helps to keep the detached squares of bone (B and C) in position.

9. The skin wound is closed by interrupted silk-worm gut stitches. The limb is immobilised on a splint until the sutures are removed, when massage of the quadriceps is commenced.

The operation, thus performed, closely resembles that described by Wagner,[5] who however does not include the synovial membrane in his Λ-shaped strip, and so avoids opening the joint.

Following are reports of three cases.

I

A. B., male aged 27 years, labourer, was admitted to the General Hospital, Birmingham, on June 15th, 1932.

History.—There were no symptoms until the age of 14 years. He was able to play football at school. He had been troubled by pain and "stiffness" of both knees for the last 13 years, but this had become much worse of late. Nine brothers and sisters were all normal.

Examination.—The following points were noted: Prominence of internal condyles of femora, absence of tubercles of tibiæ, very small patellæ situated on the outer aspects of the knee-joints (Fig. 3). Passive movements were free and painless, and a full range of flexion and extension was obtained. Active extension of the knee from the sitting posture was severely limited. Fig. 5 shows the maximum degree of active extension possible before operation.

FIG. 5.—Photograph of left knee before operation, showing maximum degree of active extension possible in the sitting position, and position of small laterally placed patella.

X ray (Fig. 4) shows: Hypoplasia and external dislocation of patellæ, absence of tubercles of tibiæ, and genu valgum.

Operation, as described above, was performed on the right knee by Mr. Leather on June 21st under general anæsthesia.

Results.—Fig. 6 is a photograph taken more than two years after the operation. It shows that the knee can now be fully extended by active muscular contraction, without dislocation of the patella from the intercondylar groove. The knee has not been painful since the operation, and has shown no tendency to give way.

The operation on one knee only has caused such an improvement in the patient's gait and stability,

FIG. 6.—Photograph of left knee after operation, showing restoration of full range of active extension of the knee-joint.

that he is now able to follow his occupation without difficulty. It is proposed to perform a similar operation on the other knee at a later date.

The two following cases are quoted as examples of the successful treatment of recurrent dislocation of the patella by the operation as described above:—

II

C. D., female, aged 17 years. Admitted Sept. 25th, 1932.

History.—Recurrent dislocations of left patella during the past 12 months. This first occurred as a result of jumping and landing heavily on both feet.

Examination.—There was abnormal laxity of the capsule of the knee-joint. The patella could easily be dislocated outwards.

Treatment.—Massage and faradism to the vasti caused no improvement.

Operation.—By Mr. Leather, Sept. 27th; transplantation of insertion of the patella tendon.

Result.—There had been no recurrence of the dislocation 18 months after the operation. All movements of the knee-joint were free and painless.

III

E. F., male, aged 20 years. Admitted to the General Hospital, Birmingham, Oct. 28th, 1933.

History.—Attacks of pain had occurred in the right knee, since it had been injured in falling off a bicycle six months before admission. At 5 years of age—operation for genu valgum.

Examination.—Right knee—patella permanently displaced to outer side of knee-joint. Movements were free, but some grating was felt.

Operation.—Nov. 3rd, by Mr. Leather. Transplantation of insertion of patellar tendon.

Result.—Movements of knee-joint free and painless. Patella has remained in the intercondyle groove.

I am much indebted to Mr. J. B. Leather, for permission to record his cases, and to Dr. Harold Black for the radiograph.

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THE THERAPEUTIC APPLICATION OF PHENYLMERCURIC SALTS

OBSERVATIONS ON THE USE OF BASIC PHENYLMERCURIC NITRATE IN GYNÆCOLOGY

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Robert Otto,[1] a German chemist, synthesised phenylmercuric nitrate (now known to be basic phenylmercuric nitrate) in 1870. For over half a century this substance was neglected. Some of its chemical properties were known, but it was not until sixty-one years later, in 1931, that Weed and Ecker [2] (after four years' investigation) reported the successful preparation of this and other phenylmercuric compounds in a purified state. They pointed out that basic phenylmercuric nitrate combines a very high bactericidal potency with a relatively low local and systemic toxicity for animals and for man; that very high dilutions of an aqueous solution exert a strong disinfecting and antiseptic power on bacteria and moulds; that its effectiveness is not impaired by the presence of tissues or tissue juices; that it is very slightly irritant on local application to wounds and most mucous membranes; that it has no odour and colour and does not stain; and that it does not corrode surgical instruments.

In 1932–33 Weed and Ecker [3 4] reported further on the chemical and biological properties of the phenylmercuric salts, and in 1933 Birkhaug [5] independently confirmed their original work. He stated:

"Because of its high bactericidal action, low toxicity, general diffusibility and inability to precipitate serum or tissue proteins (basic) phenylmercuric nitrate appears to be useful in the production of bacteriostatic action in the biliary, cerebro-spinal, genito-urinary and vascular tracts. The alcohol acetone aqueous 0·034 per cent. tincture of (basic) phenylmercuric nitrate has a superior value as an efficient non-deleterious and powerful preoperative skin disinfectant. This mercurial solution is relatively free from the many objectionable features of tincture of iodine and the alcohol acetone aqueous 2 per cent. solution of mercurochrome."

The Council of Pharmacy and Chemistry of the American Medical Association,[6] in a preliminary report on basic phenylmercuric nitrate and phenylmercuric chloride, stated that:

"Test-tube experiments have shown that (basic) phenylmercuric nitrate is a powerful germicide and fungicide of wide ranging effect and relatively low toxicity. Fewer tests have been made with phenylmercuric chloride, but it seems likely that the two compounds are equally active. Experiments with animals indicate that the ingestion of (basic) phenylmercuric nitrate may lead to strong bacteriostatic and bactericidal effect in the blood, cerebro-spinal fluid, bile, feces and urine. It seems to be clearly indicated that (basic) phenylmercuric nitrate can disinfect skin, disinfect instruments without corroding them and preserve biologic products against bacterial growth without destroying their specific properties and actions."

In 1933 Armangue and Maestres,[7] working in Barcelona, Spain, reported a new technique for the synthesis of phenylmercuric salts. Hatfield,[8] in 1932, studied 16 mercurials, including two of the phenylmercuric salts and their particular effectiveness against wood-destroying fungi. He showed conclusively that the effectiveness of basic phenylmercuric nitrate and phenylmercuric chloride was markedly superior to that of all the other mercurials studied. In 1934 Pyman and Stevenson [9] demonstrated that the phenylmercuric salts used in the investigations of Weed and Ecker and of Birkhaug were the basic salts, the compound thought to be the nitrate actually being $C_6H_5HgOH \cdot C_6H_5HgNO_3$.

In a second publication Armangue and Maestres [10] reported on the construction and bacteriological properties of other phenylmercuric salts. They prepared the benzoate, borate, lactate, citrate, phenate, phosphate, oleate, oxalate, picrate, salicylate, sulphate, and tartrate in addition to the previously constructed chloride and basic nitrate. All these salts were studied for their bacteriostatic and bactericidal effects on 13 species of organisms. Because of the fact that it was found to have the least irritating effect and that it was more soluble than the basic nitrate, these investigators chose the borate for extensive clinical studies and found this particular salt superior to anything thus far developed. Armangue and Maestres stated that: "Clinical trials on the practical utility of (phenylmercuric borate) attempted by a legion of investigators has given astounding results which indicate that the (phenylmercuric borate) is an acquisition of positive value in human therapy."

In January, 1935, Stark and Montgomery,[11] working with basic phenylmercuric nitrate, indicated that the active bactericidal component was the C_6H_5Hg ion and stated that this differed from other organic mercurial compounds used as antiseptics in that the mercury atom was in the cation. Since bacteria are usually negatively charged, this positive charge of the phenylmercuric ion may be a factor in its high inhibitory power. Bacteriostatic effects were studied by the methods of Kolmer as modified by Birkhaug. Their results confirmed the findings of Birkhaug in which the latter showed the extremely high inhibitory powers of this salt when small numbers of organisms were employed. The germicidal effects were determined by the Shippen modification of the Food and Drug Administration method.

In comparing phenylmercuric salts as prepared by the method of Weed and Ecker and the same products as prepared by methods used by some commercial manufacturers, it is highly important to note that, as pointed out in the report of the Council on Pharmacy and Chemistry,[6] Weed has expressed the opinion that the compounds obtained from several manufacturers are not as satisfactory as the compounds prepared by him or according to his method under the supervision of himself and Ecker. The basic phenylmercuric nitrate used in my own work was originally provided by them, and the subsequent material in a similarly highly purified form was furnished by the Hamilton Laboratories, Inc., Hamilton, Ohio, who market this product at present under the trade name Merphenyl Nitrate (Basic).

In 1931, at the request of Dr. Ecker, I undertook a study of the use of this product in gynæcology. The opportunity was given to me of treating 100 cases of specific and non-specific endocervicitis and associated conditions both at Mount Sinai Hospital and at the House of The Good Shepherd in Cleveland. The results [12] showed an invariably favourable response in all the conditions encountered, both specific and non-specific, except when *Trichomonas vaginalis* was the inciting agent. It was noted that the character of the infection could be changed, often by a single application, and that even when complete and rapid clinical recovery was not attained

there was enough improvement to allow of the successful use of adjuvant treatment. In effective concentrations, both as local application (1 : 1250) and as a douche (1 : 25,000), basic phenylmercuric nitrate was non-toxic, and almost non-irritant to the vaginal mucous membrane, and it proved effective in the presence of tissues. When it was used persistently as a douche the patients did not develop symptoms of mercury poisoning and the output of mercury in their urine was negligible.

Miss N. E. Schreiber, of the department of pharmacology, Western Reserve University, determined by a highly sensitive microchemical method the mercury content of 24-hour urine specimens from patients in this series of cases who had been douching with the 1 : 25,000 solution once or twice daily for six weeks. In three specimens examined the mercury output ranged from 0·008 to 0·014 mg. Judging from the work of Sollmann [13] and his associates, this represents an entirely negligible output. Where significant quantities of ionised mercury are absorbed, as in luetic therapy, the urinary excretion of the metal is very much greater than that found in these cases.

In this paper I wish to report the results of the subsequent use of basic phenylmercuric nitrate in private as well as dispensary practice.

CONDITIONS TREATED AND METHOD OF TREATMENT

Of the 63 cases reported here, 41 were seen in the dispensary and 22 in private practice. The former comprise 11 cases of vaginitis in children (5 gonorrhœal and 6 due to a mixed infection, including 1 due to *B. coli*), 13 cases of *Trichomonas vaginalis* infection in adults, 14 cases of endocervicitis (7 gonorrhœal and 7 non-specific), 1 case of recto-vaginal fistula, 1 case in which a slough followed vaginal hysterectomy, and 1 case of paracervical sinus with infection following cauterisation. The latter group consists of 11 cases of gonorrhœal endocervicitis, 2 of trichomonas infection, 4 of non-specific vaginitis, 4 of non-specific endocervitis, and 1 case of tineal infection involving the perineum and labia.

Certain changes in technique have been made since my preliminary report.[12]

The basic phenylmercuric nitrate used in the treatment of all the present cases was an aqueous 1 : 1500 solution. That given to the patients for dilution in the preparation of the douche was a 1 per cent. solution in diethylene glycol. The latter was dispensed in 2-oz. bottles and the patients were advised to use a drachm (4 c.cm.) to a quart of comfortably warm water, making approximately a 1 : 25,000 solution for use as a douche. The use of a tampon saturated with the concentrated aqueous solution was discontinued and treatment was confined to the cleansing of the urethra, vagina, and cervix, the instillation of basic phenylmercuric nitrate (1 : 1500) and the use of the daily douche as described. The necessity for douching slowly and thoroughly in the semi-recumbent position, preferably in the bath tub, was stressed. In addition, each patient was questioned as to her method of cleansing following bowel movement and in those cases in which the method was faulty, proper instructions were given to prevent fæcal contamination of the introitus. It is surprising to note the tremendous number of women and girls both in dispensary and private practice who have never given a single thought to the proper method of cleansing the anus after defæcation.

In the treatment of vaginitis in children the following method was used:

The labia were separated and an endoscope was inserted where possible. A smear was taken by inserting a very small, dry, sterile swab into the vagina. Subsequently, a blunt 2 c.cm. syringe was used to instil approximately 1 or 2 c.cm. of the 1 : 1500 solution of basic phenylmercuric nitrate directly into the vagina. The hips were elevated for a few minutes to prevent the medication from running out. The mother of the patient was instructed to make a 1 : 25,000 solution of basic phenylmercuric nitrate (as outlined above) and by using an infant enema tip or a soft rubber catheter to irrigate the vagina once or twice daily using a pint of the solution each time. In order that the mother might fully understand the method, a visiting nurse was sent to the home the first day to instruct her in the technique.

VAGINITIS

Eleven cases of vaginitis were seen at the dispensary of Mount Sinai Hospital in children ranging from 4 to 15 years of age. Five were clinically and microscopically gonococcal in origin; one was due to *B. coli*, and the remaining five were non-specific microscopically. When treatment with basic phenylmercuric nitrate began the infections had been present for 1–6 months, and all but one had had at least one other form of treatment (usually hexylresorcinol instillations). The success obtained with the new remedy was really gratifying. The severest cases were free from subjective symptoms within a very few days, and I have been able to discharge these youngsters, with no signs or symptoms and with negative smears, as soon as six weeks from the onset of treatment. Strange as it may seem, the cases of specific vaginitis cleared up a good deal more quickly than the non-specific. Two cases in the latter group had been reinfected.

One was a child of 6 whose original infection cleared up in six weeks. She remained symptom-free for four months, and then returned with a reinfection, again non-specific. A second course of treatment as outlined produced a cure in three and a half months. The second child, aged 10, also had a non-specific vaginitis. After eight weeks of treatment she remained symptom-free for three months, but returned with a reinfection; this was completely eradicated by intensive therapy in two months.

In both cases the reinfection was attributed directly to improper cleansing of the anus after defæcation. Both children have now been symptom-free for 18 months.

A typical case will serve as an example of this group.

A girl, aged 11, was referred to the gynæcological service from the pædiatric service, Nov. 21st, 1933, because of a persistent vaginal discharge of three weeks' duration. Vaginal smears taken on the first visit to the gynæcological dispensary were positive for gonococci. This youngster had no previous treatment of any kind. Following the method as outlined herein, therapy with basic phenylmercuric nitrate was instituted. On the second visit four days later the mother reported a very definite lessening of the discharge, with a change in colour from a yellow-green to milk-white and a change in viscosity from tenacious to watery. Endoscopy corroborated this report. Continuation of the intensive treatment until Dec. 4th, 1933, permitted the child to return to school symptom-free. After four more weeks of treatment in which the intervals between treatments and douches were gradually lengthened, she was discharged. Six months later she was still free from symptoms and vaginal smears were negative.

In private practice I encountered 4 cases of vaginitis, non-specific in origin, 3 in adults and 1 in a child. The former group comprised a case of senile vaginitis with secondary infection, a case of vaginitis following the prolonged use of a Smith-Hodge pessary, and a case of vaginitis due to fæcal contamination. In all of them instillation of basic phenylmercuric nitrate with daily douching made the patients free from signs or symptoms. A case of

chronic vaginitis recently reported by Hitchings[14] bears out my contention that basic phenylmercuric nitrate will change the character of the infection within 24 to 48 hours. Although it may not always be possible to clear up the source of the infection, as in deep-seated chronic cervicitis, the use of this antiseptic will improve the patient subjectively and objectively and will permit the successful use of adjuvant treatment.

TRICHOMONAS INFECTION

In a previous report I mentioned that the use of basic phenylmercuric nitrate in two cases of *Trichomonas vaginalis* infection gave poor results. Thinking that prolonged intensive therapy might prove effective, I reinvestigated this problem. A total of 15 cases, diagnosed microscopically, were treated by instillations of basic phenylmercuric nitrate three times weekly and the use of douches twice a day. Of this number, 13 were seen at the dispensary and 2 in private practice. In each case the urine, as well as the vaginal discharge, was examined for the protozoon. In 2 cases of recurrence the stools were checked in a similar manner. Realising that reinfections are common in this particular condition and that, it has been said, about one-fifth of these arise from fæcal contamination, I thought it advisable to be particularly careful in pointing out to these patients that the utmost care must be taken in cleansing the anal region following defæcation.

Among the dispensary cases the most rapid recovery occurred in a 35-year-old patient who was seen for the first time on Nov. 8th, 1933, with a typical thin, frothy, greenish-yellow discharge and punctate hæmorrhagic areas in the cervix and adjacent areas; examination of a hanging-drop preparation revealed the presence of *T. vaginalis*. She had had no previous therapy. Treatment with basic phenylmercuric nitrate was instituted and one week later the patient was much improved. The inflammatory process had cleared up completely and there was only a very slight milky leucorrhœa around the cervix. Ten days later the patient had no discharge; the cervix and vagina looked normal. A smear and a hanging drop were negative. She was instructed to continue basic phenylmercuric nitrate douches daily for one month, at the end of which time smears were again negative. She was discharged and has remained well for fifteen months.

Of the 13 dispensary cases, 6 had previous therapy directed against the *T. vaginalis*. These included the 2 cases mentioned in a previous report.[12] This therapy consisted in the use of hexylresorcinol, acriflavine, potassium permanganate, picric acid, merthiolate, and powdered quinine. These cases were then treated with basic phenylmercuric nitrate as outlined. Three made what appeared to be complete recoveries in three and a half to six months and have remained negative since June, 1934. Three cases showed similar early results. One patient remained away after one month's treatment and returned six months later with either an exacerbation or a reinfection. She cleared up after three months of intensive treatment. The other 2 cases remained negative for three and five months respectively and returned with reinfections. Return to therapy plus proper cleanliness after bowel movement has cured both patients. The 7 dispensary cases having no previous therapy made the most rapid clinical and microscopic recovery. The earliest occurred in seven weeks, the longest in four months.

Besides the factor of cleanliness following defæcation which plays so important a part in the treatment of trichomonas infection, there is another problem in this connexion which should be stressed. It has been said that the menstrual period, during which time medication is rarely if ever used directly in the vagina, nullifies any therapeutic measures used during the preceding two weeks. If this is true, it may account for the unusual delay encountered in the cure of some of these patients. It has been suggested that in certain selected cases an attempt be made to treat them daily through the menstrual period at least with gentle douches.

ENDOCERVICITIS

In this group there were 14 cases from dispensary practice equally divided as to specific and non-specific infections, and 15 cases from private practice. In the latter group 11 were gonococcal and 4 non-specific.

The most spectacular results were in the group of patients having gonococcal endocervicitis. There appears to be no difference according to whether these patients are dispensary visitants or able to pay for private medical care. Of the total of 18 cases of specific gonococcal endocervicitis treated, not one failed to show a definite improvement on her second visit, usually one week later. All vouchsafed the information that the discharge had lessened and that they "felt better." As in the group discussed in my preliminary report,[12] the discharge had changed from the "thick, greenish-yellow, foul-smelling leucorrhœa to a milk-white, odourless and comparatively thin secretion." All these patients had the benefit of the daily douche with basic phenylmercuric nitrate and showed the results of it in the rapidity with which they became symptom-free. As previously reported, adjuvant treatment in the form of the actual cautery, silver nitrate, and the like for associated erosions, nabothian follicle cysts, &c., could be initiated at an earlier period in the course of treatment than heretofore.

In the group of 11 cases of non-specific endocervicitis (7 in dispensary and 4 in private practice) all showed a rapid amelioration of their symptoms. As a cleansing germicidal douche, basic phenylmercuric nitrate proved its efficacy in this as well as in the other types of infection in the lower female genital tract. As soon as the subjective symptoms had improved and there was a decided change in colour and lessening in the leucorrhœa, adjuvant treatment was successfully employed in each case.

OTHER CONDITIONS

In one case of a *paracervical sinus* following cauterisation, basic phenylmercuric nitrate was used with beneficial results:—

This 38-year-old patient came to the dispensary on May 20th, 1933. A blind paracervical sinus was found parallel to and to the right of the cervical canal, admitting a probe for a distance of 2 cm. She had been treated with various other antiseptics and finally with increasing concentrations of silver nitrate in order to obliterate the sinus, with no results. On Oct. 25th basic phenylmercuric nitrate 1 : 1500 was instilled into the cervix and the sinus. The patient was instructed to use basic phenylmercuric nitrate daily as a douche. On Nov. 8th the discharge had changed in colour from a greenish-yellow to a milk-white, and in consistency from a tenacious mucoid to a watery type. The patient, who had been much annoyed for several months by the persistent discharge, volunteered the information that for the "first time in ages" she felt better and had no discharge. Examination one week later on the 15th showed a reduction in the depth of the sinus of about one-half. On Dec. 1st, 1933, the patient

was discharged from the dispensary with the sinus completely occluded and the secondary infection associated with her endocervicitis completely eliminated.

Since publication in my preliminary report [12] of the original case of *rectovaginal fistula* which closed spontaneously under the influence of basic phenylmercuric nitrate, a second case of post-operative rectovaginal fistula has been treated in the same way in the out-patient department at Mount Sinai Hospital:—

The patient, aged 33, was referred to the gynæcological dispensary on Oct. 24th, 1934, with the diagnosis of a post-operative rectovaginal fistula following perineorrhaphy. She complained of the passage of small quantities of fæces via the vagina, and of a foul vaginal discharge. Examination revealed a foul greenish-yellow discharge coming from the vagina and a fæcal discharge from a fistulous opening one-quarter inch in diameter, half an inch behind the introitus. The entire vagina and cervix were thoroughly cleaned with cotton pellets moistened with water. Basic phenylmercuric nitrate 1 1500 was instilled into the cervix and about 5 c.cm. was allowed to remain in the vagina. The patient was advised to use the 1 : 25,000 basic phenylmercuric nitrate douche twice daily. At the end of the first week the whole vagina looked clean. The fistulous opening into the rectum was clearly visible The treatment was continued for another week; at the end of this time the edges of the fistulous tract were touched up with 20 per cent. silver nitrate. The douches were continued once instead of twice daily. On Dec. 5th, 1934, the fistula was closed and the patient was instructed to continue the daily douches for several more weeks. On Jan. 2nd, 1935, she was discharged from the gynæcological service completely cured with closure of the fistula and the absence of leucorrhœa.

Post-operative slough.—A woman, aged 46, was admitted to the out-patient department on Feb. 8th, 1935, after a vaginal hysterectomy, right salpingo-oöphorectomy and a perineorrhaphy. She complained of a foul, thick, fæcal-like discharge which showed no signs of clearing up.

Inspection revealed a large slough high in the vault along the stuture line. It appeared at first as if a recto-vaginal fistula had occurred. However, upon the removal of the debris and the thick, mucoid, foul-smelling, brownish-yellow discharge, no opening into the rectum could be found. The vagina was cleansed and swabbed with solution of basic phenylmercuric nitrate and the patient was instructed to take the antiseptic douches twice daily. At the end of the first week the improvement was marked. The intervals between douches were gradually lengthened, and at the end of four weeks the patient was discharged as well with absence of any leucorrhœa or slough.

Tinea cruris.—In private practice I had one patient who had had a tinea cruris of long standing. Pelvic examination was negative. There was no leucorrhœa. The tinea involved both thighs in the region of the perineal crural fold and on one side extended to the labium majus. Twice daily applications of basic phenylmercuric nitrate ointment 1 : 1500 according to the method advocated by Levine [15] cured the tinea in three weeks with no recurrence after six months.

SUMMARY AND CONCLUSIONS

1. Laboratory investigations on the utility of phenylmercuric salts, in particular basic phenylmercuric nitrate, indicate that these compounds combine with the highest bactericidal and fungicidal potency yet discovered for any class of compounds, a relatively low toxicity for animals and for man. The chemical and physical properties of these salts, most of them being colourless, odourless, tasteless, relatively non-irritant, non-corrosive to surgical instruments, and quite stable, greatly enhance their usefulness.

2. Clinical studies with basic phenylmercuric nitrate, which include up to the present many hundreds of cases in which the compound has been used with excellent results, indicate that this preparation is of great utility in the treatment of a wide variety of infections due to bacteria and fungi. Infections with the protozoon *T. vaginalis* also yield to therapy with basic phenylmercuric nitrate.

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THE TREATMENT OF CARCINOMA OF THE LOWER END OF THE ŒSOPHAGUS *

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CARCINOMA of the œsophagus constitutes between 2½ and 5 per cent. of all cases of malignant disease. There are three definite pathological types:

(1) The bulky, polypoid type of growth which extends into the lumen of the œsophagus causing obstructive symptoms at an early stage.

(2) The shallow ulcerating type causing early symptoms of mediastinal involvement such as pain and backache. Metastases and obstructive symptoms may be absent.

(3) The hard infiltrating scirrhous type which invades the œsophageal wall, encircles the lumen, causes fixation of the walls, and produces obstruction.

The disease is commonest in the lower third of the œsophagus (50 per cent.), and in four cases out of five it is a squamous epithelioma. It is stated that it remains local for quite a long period and that metastases are relatively late, but this is open to question. Abel,[1] in post-mortem examinations of patients dead of œsophageal carcinoma, found 46 to 72 per cent. free from metastases; lymph-nodes, however, were involved in about half the cases. Death is due most commonly to perforation of the œsophagus with the development of pneumonia, mediastinitis, or hæmorrhage, but sometimes there is extension by the blood stream with widespread metastases.

From time to time surgeons have attempted to solve the baffling problem of malignant disease of the gullet but with very little success. The record of

* Based on a communication to the Royal Medico-Chirurgical Society, Glasgow, on April 5th, 1935.

achievement in the field of radical surgery can be summed up in the three cases operated upon by Torek,[2] Eggers,[3] and more recently Grey Turner.[4] In point of fact the technical difficulties are so great, the disease so well established when first diagnosed, and the condition of the patient so poor, that only in a very exceptional case could success be hoped for, and then only in the hands of a surgeon with the special experience necessary to carry through the highly complicated and difficult operations involved. For this reason surgeons have mostly been content with palliative measures.

Formerly patients showing complete obstruction were submitted to gastrostomy. This operation staved off starvation, and by allowing rest to the œsophagus, relieved the associated inflammatory congestion so that some temporary improvement in swallowing might be expected. Not infrequently, however, the operation seemed to improve the patient's condition but little. Its performance, no doubt, confirmed his worst fears as to the nature of the disease, and with the loss of the mental tonic of being able to swallow food, an attitude of depression and despair was engendered which made the downward trend still more rapid.

It was not unnatural, therefore, that with increasing experience of the œsophagoscope in the diagnosis and treatment of conditions of the gullet, surgeons turned hopefully to a method which appeared to obviate the necessity for a gastrostomy.

TREATMENT BY RADIATION

In view of the success attending the radium treatment of epidermoid carcinoma elsewhere in the body, it was thought that good results should be obtainable in carcinoma of the œsophagus provided the difficulties of approach could be overcome and the technique of exposure accurately worked out. This method was proposed as early as 1904, and soon there were many accounts of apparatus, dosages, filters, and new methods for accurately placing the radium in the œsophagus. There were, however, no reports of cures or even successful palliation and the method fell somewhat into disfavour. Within recent years the most hopeful results have been reported by Guisez,[5] who has had a very extensive experience of œsophageal work. He used 100 to 120 mg. of radium bromide screened by 1·5 mm. of platinum, inserted every two days for 10 to 12 hours. About six treatments in all were given. Of 270 patients treated in this way, 30 lived for more than 18 months, and of these, one survived 11 years, one 10 years, and one 5 years. On the other hand, Watson,[9] of the Memorial Hospital, New York, states that none of his cases treated by intra-œsophageal radiation has lived long enough to encourage him to continue with this method.

Direct implantation of radon seeds into the tumour through the œsophagoscope has been given a trial, but it is obvious that with narrowing of the lumen by the growth, uniform distribution of the seeds is difficult to attain. In some cases a Souttar's tube has been used, the tube acting as a carrier for the radon applicator, while in other cases a vulcanite tube of the Symonds's type, with grooves on the wall for carrying radium needles, has been employed.

Surgical exposure of the œsophagus from the outside with implantation of radium round the growth has been tried, but it is too soon to indicate what success is attending this form of treatment. Lastly, high voltage X rays, administered through several portals, has given encouraging results in the hands of Levitt,[6] who reported six cases at a meeting of the Royal Society of Medicine last year. It is, however, in carcinoma of the upper end of the œsophagus that X rays are most effective.

On the whole, the results from treatment by radiation have been disappointing. Many different methods have been employed with no permanent cures, and it is still undecided whether the barrier to effective treatment lies in the character of the growth, or whether the difficulties of approach have delayed the finding of the best radiation technique.

EARLIER EXPERIENCES WITH RADIUM THERAPY

Some seven or eight years ago, in an endeavour to improve the outlook in cases of complete malignant obstruction of the lower end of the œsophagus, I adopted the method of opening the stomach, dilating the lower end of the œsophagus with the finger, and introducing a catheter containing radium in contact with the growth, the other end being brought out through the gastrostomy opening. These were cases in which the stricture was impermeable to manipulation from above through the œsophagoscope. The radium (30 mg.) was left in position for 5–7 days. When treatment was over, a tube was left in the stomach for feeding purposes for three weeks, after which the gastrostomy wound was allowed to close. Twelve patients were treated in this way and the results were encouraging. Relief was provided for periods of 6–18 months, and the majority of the patients were able to swallow till near the end.

This method of treatment had very definite disadvantages. In the first place a general anæsthetic was required, and the opening of the stomach widely enough to allow manipulation of the lower end of the œsophagus was attended with a fair degree of shock which in starved and enfeebled patients could not be ignored. Furthermore, it was conceivable that the forcible dilatation with the finger might cause some splitting of the wall of the œsophagus and allow spread of infection. Three patients died within a week of operation from pneumonia or mediastinitis, and even allowing that these patients were very bad risks, I considered the operative procedure too severe for the average case.

Another drawback was the inability to fraction the dosage of radium, with the result that the patient received the whole of the radium reaction when his physical resources were at their lowest ebb.

The main conclusion arising from a study of these earlier cases and the failure to achieve lasting results from radium therapy was that the average squamous epithelioma of the œsophagus is not a very radiosensitive tumour, and that it seems almost impossible to deliver a lethal dose to the growth without damaging unduly the normal cells in the vicinity. The work of Coutard [7] at the Radium Institute in Paris suggests that in dealing with growths of relatively low sensitivity the best results are obtained with repeated small doses of radiation extending perhaps over a period of several weeks. With this fractional technique applied to X ray dosage, Coutard was able to obtain improved results in the treatment of such conditions as malignant glands in the neck and carcinoma of the larynx, which had previously responded poorly to radiation therapy. This method stresses the importance of the integrity of the supporting vasculo-connective tissue.

It seemed, therefore, in the light of present knowledge and experience, that the technique for radium

administration in the case of carcinoma of the œsophagus should embody the following features:—

(1) It should be easy of performance and carry little or no operative risk.

(2) It should permit of small doses of radiation being given either daily or every second day with the minimum of discomfort and upset to the patient.

(3) It should permit of gradual dilatation of the stricture.

(4) The distance factor should be increased so as to obtain better screening and more uniform radiation to the growth.

THE MANAGEMENT OF A CASE

The preliminary diagnosis is made by fluoroscopic examination, and it is important to define accurately the upper and lower limits of the growth by examination in both the horizontal and vertical positions. This also guards one against treating the œsophageal extension of a carcinoma of the cardiac end of the stomach.

If the patient's condition is fairly good, he is submitted to œsophagoscopic examination, at which time the diagnosis is verified and a portion of the tumour removed for microscopic study. One is tempted at times to forego this step in view of the frail condition of the patient and the slight risk entailed, but it is of paramount importance to determine that the growth is really a squamous epithelioma and not the slower growing adenocarcinoma or even a syphilitic lesion.

Patients unable to swallow anything are prepared with rectal salines and glucose and then have a gastrostomy performed under local anæsthesia. At the end of a week, the rest to the gullet alleviates the superadded spasm and the patient is usually able then to swallow fluids. At this stage he is given fine silk to swallow after the method of Dunham,[8] who first introduced this procedure in 1903. The swallowing is done slowly, not more than a yard in 24 hours. At the end of 48–72 hours, the gastrostomy tube is removed, and with a small blunt right-angled hook the thread is pulled up from the stomach on to the surface. There is never any difficulty in finding the thread provided it has reached the stomach. A few patients find the silk slightly irritating to swallow and in such cases ordinary fine sewing thread can be substituted, the stronger silk being attached to the oral end of the linen once the other end has been retrieved from the stomach.

Very gradual dilatation of the stricture is then carried out by attaching rubber catheters to the silk and pulling them up through the stricture towards the mouth. A larger calibre catheter is used each day until a size 14 to 16 English passes easily. For the radium treatment either a catheter of this calibre is used to begin with, or a special thick-walled rubber tube with a small metal olivary tip which is perforated to allow the passage of the thread. Thirty milligrammes of radium are used, in the form of 5 mg. needles arranged in tandem, the active length being 4 inches. This allows the radium to project 1 inch above and below the apparent limits of the growth in an average case. The position of the tube is checked by radiography, and daily treatments of 4–6 hours are given. The total treatment extends over 100–130 hours, depending upon distance.

When the radium is not in position the patient is fed by catheter through the gastrostomy opening, and is also allowed fluids by mouth. When the treatment is over, the gastrostomy wound is allowed to close. Patients are subsequently examined after an interval by radiography and œsophagoscope, and if considerable cicatricial narrowing is taking place, dilatation is carried out with metal-tipped bougies guided over a previously swallowed silk thread. Occasionally a second radium treatment is given at the end of three or four months.

RESULTS AND CONCLUSIONS

The series treated in this manner was small, only 11 cases, and did not include some of the most unfavourable cases which were treated by X rays alone. There were no deaths during operation or while the patients were under treatment. The longest survival was 3½ years; three patients survived from 1½ to 2 years, one for 16 months, and six died within a year.

The patients with the bulky polypoid obstructing growths do best, partly because they are diagnosed a little earlier and partly because they appear to react a little better to radium. The ulcerating non-obstructing growths are not improved by treatment. Very old patients and those extremely debilitated react poorly. In a few cases I have tried to improve the results by giving a course of X ray treatment after intra-œsophageal radium, but without much apparent success. One difficulty encountered was that after an adequate radium treatment the patients could not stand a full course of X rays. At the same time I think a combination of radium and X ray treatment offers the best hope of success. It is impossible with X rays alone to build up an adequate depth dosage to the lower end of the œsophagus, but X rays should prove a useful adjunct in the treatment of outlying extensions of the growth which are insufficiently irradiated by the intraluminal radium.

I am satisfied that the main barrier to effective treatment of carcinoma of the œsophagus lies in the relatively late diagnosis of the disease, and the only moderate radiosensitivity of the average growth. It is unusual to meet with a highly radiosensitive growth which has been diagnosed early, and these hopeful cases constitute under 5 per cent. of the total admitted. In such cases a survival period of at least three years should be obtainable by appropriate treatment. With the remainder, a survival of 12–18 months is the best that can be hoped for at the present time. Nevertheless treatment is well worth while, for the patients are maintained in fair comfort until near the end. In conclusion, I think the results from radium treatment have been slightly improved by fractioning the dosage; but the problem of carcinoma of the œsophagus is still unsolved, and its solution lies beyond any mere modification of technique.

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EYE HOSPITAL, BRISTOL.—The Duchess of Beaufort on Oct. 21st opened the new Eye Hospital in Lower Maudlin-street, Bristol, which has been erected at a cost of £55,000. The old premises next door are being altered to provide accommodation for the nursing and resident staff. The sum of £23,000 is still required.

HÆMOCHROMATOSIS AND HEREDITY

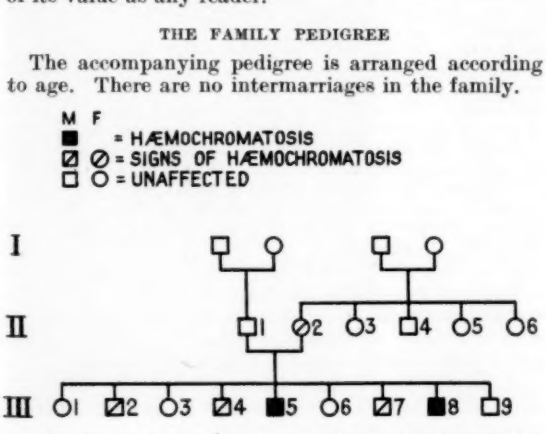
By R. D. Lawrence, M.D. Aberd., F.R.C.P. Lond.
ASSISTANT PHYSICIAN TO KING'S COLLEGE HOSPITAL, LONDON

Bronzed diabetes (hæmochromatosis) is a very rare disease, most probably due to an inborn error of metabolism, mainly of iron. Sheldon's [1] recent publications provide the most complete survey of the disease, and he points out how a familial or hereditary incidence is to be expected in a presumably congenital type of disease. Only 5 certain familial cases in brothers are admitted by him and only 3 hereditary cases, not entirely proven, in succeeding generations. I therefore think it important to present evidence of definite familial and perhaps hereditary incidence in one family under my observation. Admittedly the clinical evidence is incomplete and the history doubtful in some members, but from the death of many of the family and some of their doctors, the evidence is as complete as it is ever likely to be.

The majority of cases of hæmochromatosis are diagnosed from the appearance of diabetic symptoms, and in this way I first came in touch with this family. I recognised the affected member as a case of hæmochromatosis, and the family history showed that several other relations were known to have passed sugar. Altogether the history of 116 individuals in 6 generations was obtained as regards glycosuria. But with all the necessary inaccuracies involved in such an extensive pedigree we need not be concerned, and the appended pedigree is confined to the three relevant generations. It is worth describing the numbered members in what detail is possible. It should be remembered that the four classical signs of hæmochromatosis—pigmentation, cirrhosis of the liver, diabetes, and sexual hypoplasia—may not be found in every case, and that two and even one such symptom of the complete syndrome in such a family may have significance. Much of the evidence has been obtained by correspondence, and I am as critical of its value as any reader.

THE FAMILY PEDIGREE

The accompanying pedigree is arranged according to age. There are no intermarriages in the family.



The first generation is not known to have had diabetes, glycosuria, or pigmentation. In the second generation only II 2 was known to have diabetes for a number of years, and died aged 70. She was slightly jaundiced and had a large liver (three fingers-breadth). Severe anæmia was present and the differential diagnosis made shortly before death in 1916 was " ? pernicious anæmia or malignant disease." No note was made of any special pigmentation except slight jaundice and a lemon-yellow tint, nor of the consistency of the liver.

The third generation merits fuller description. Unfortunately many details are missing and cannot be ascertained owing to the death of some of their doctors and the absence or destruction of notes. One of the recorded members—a doctor—has given much useful detail.

No. 1, the eldest, a female, aged 70, has pernicious anæmia. Glycosuria is absent, and she is not known to have a large liver or pigmentation.

No. 2, male, died aged 64, from what was tentatively diagnosed as "neoplasm of the liver, secondary to ? stomach." A large mass including the liver and ? spleen was present in upper abdomen; this was especially hard, irregular, and tender at the right flank. Ascites and jaundice were present at the end, but there is no mention in the short notes available of glycosuria or pigmentation. Wassermann reaction negative. His brother doubted the diagnosis of carcinoma because cachexia was absent and because the abdominal swelling had been present too long to be a carcinoma. "For several years he made his tailor alter the cut of his clothes to conceal the prominence of the upper abdomen."

No. 3, female, in good health.

No. 4, male, aged 62, in good health, has slight glycosuria, no enlarged liver, some brownish patches of pigmentation on face only.

No. 5, male, died aged 58, of some intercurrent obscure febrile illness. He was a typical case of hæmochromatosis with a very large liver and insulin had been required for 2½ years to control the diabetes.

No. 6, female, good health, no abnormality.

No. 7, male, good health, no signs of hæmochromatosis, but a slight trace of sugar has been found in his urine.

No. 8, male, a typical case of hæmochromatosis. Known to have large liver and diabetes since age of 48. Now aged 55, and keeps well and leads an active life with 40–50 units of insulin a day.

No. 9, male, lives in America and said to have good health.

Of the next generation none of the 13 sibs are known to pass sugar. They are mostly under thirty years of age.

Summary of above pedigree and discussion.—Of the 6 males, only 2 present the complete syndrome; 1 other died with a very large liver, 1 has glycosuria and slight pigmentation, 1 has slight glycosuria only. The sixth has no known abnormality. Of the females, only the mother showed any symptoms of hæmochromatosis—i.e., diabetes and hepatomegaly. The three sisters have not a single suggestive symptom.

If we accept only the 2 proven cases the pedigree is interesting enough to merit publication. But if we accept other members of the family who show one or a few symptoms as having hæmochromatosis, this pedigree becomes extremely interesting and suggestive.

HEREDITY AND THE NATURE OF HÆMOCHROMATOSIS

The most widely accepted view of hæmochromatosis is that it is a congenital disease, an inborn error of iron metabolism, a deposition of iron pigments in various tissues which has been going on from birth but only accumulates sufficiently to cause disease in middle age. If so, one would expect to find cases with a hereditary influence, and Sheldon has collected such evidence in 5 cases.

A striking feature of the disease is an overwhelming preponderance in males, a few females only being affected. This has never been explained, but in view of my recorded pedigree it is tempting to suggest that the disease is *hereditarily sex-linked* and is comparable with hæmophilia in this respect. One of Sheldon's [1] patients had a brother who died of

diabetes and whose mother and aunt had a long history of enlarged liver. Frisch's [2] case is still more suggestive of a sex-linked heredity. He describes a family, known locally as the "black family," in whom 7 sibs and their mother were strikingly pigmented. One brother died of hæmochromatosis; two others were pigmented and had large livers, but no glycosuria. Unfortunately the others could not be examined and even their sex is not mentioned.

The above evidence suggests that hæmochromatosis may be a sex-linked hereditary disease, like hæmophilia, transmitted by females and affecting mostly males. This hypothesis has the merit of fitting in both with the apparently congenital nature of this inborn error of metabolism and the overwhelmingly male preponderance.

It would be possible to produce arguments, genetical and otherwise, both for and against this hypothesis. This is not worth while until more evidence is accumulated from the study of pedigrees in hæmochromatosis to refute or confirm this suggestion.

SUMMARY

(1) A family of nine is described in which two brothers had proven hæmochromatosis. (2) Three other brothers and the mother, but none of the sisters, had some signs of the disease. This suggests that hæmochromatosis may be a sex-linked hereditary disease, transmitted by females and affecting mostly males.

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Clinical and Laboratory Notes

DEATH AFTER INJECTION OF ATEBRIN MUSSONATE

BY P. B. FERNANDO, M.B., M.R.C.P. Lond., D.T.M & H.
PHYSICIAN, GENERAL HOSPITAL, COLOMBO; AND
E. M. WIJERAMA, M.D., M.R.C.P. Lond., D.T.M. & H.
PATHOLOGIST TO THE HOSPITAL

ATEBRIN MUSSONATE has proved its value in the treatment of malaria; but like most other powerful drugs it must be used judiciously if toxic effects are to be avoided. Experience in the Ceylon epidemic of 1934–35 has shown that atebrin should not be given in cases of advanced hookworm disease or where there is disturbance of renal function; but unfortunately, even in cases where no contra-indications have been apparent, untoward results have occasionally followed its use.

A. B., aged 20, was admitted to hospital on July 14th, 1935, after three days' fever, with rigors, and two days' vomiting. During an attack of malaria two months previously he had two intramuscular injections of atebrin mussonate at Kurnegalle Hospital, after which he was free from fever till the beginning of the present attack.

On admission he seemed to be deeply jaundiced (skin, conjunctiva, sclerotics, &c.) and appeared very ill. His mind was clear and he talked coherently but with difficulty; he had a queer expression on his face, lying in bed with the minimum of movement and staring into space. The heart was within normal limits and there were no adventitious sounds; the pulse-rate was 130 and the blood pressure 120/50. The temperature was 99° F. and the respiration-rate 20. Nothing abnormal was detected in the lungs. The liver was not palpable or enlarged; there was tenderness over its lower border but no rigidity. The spleen was palpable three fingers below the costal margin. No malarial parasites were found in the blood. A van den Bergh test showed: direct, immediate positive; indirect, positive. No albumin, sugar, bile, or atebrin was found in the urine.

In view of the yellow staining, associated with absence of bile in the urine, the case was diagnosed as one of atebrin poisoning. The absence of atebrin in the urine was attributed to failure of the kidneys to excrete it.

Progress and treatment.—The patient was put on quinine grs. 7 t.d.s., with tinct. digitalis ɱ10 t.d.s. Glucose and sodium bicarbonate in normal saline were given freely by mouth; also an ounce of concentrated mag. sulph. solution. Next day he was gradually getting worse, the pulse being very rapid and weak. Digitalin injections were given in addition to other stimulants. On the following day (July 16th) he died.

Post-mortem findings (July 17th).—The subcutaneous tissues were bright yellow, of a colour quite unlike that seen in jaundice. The brain (2¼ lb.) was yellowish and the ependymal lining of the ventricles, the choroid plexus, and the fluid contents of the ventricles were stained yellow. A "crush" preparation did not show either parasites or pigment in the capillaries, and histological sections revealed no microscopic changes. The surface of the tongue, the mucous lining of the pharynx, œsophagus, trachea, bronchi, and their secretions were all yellow-stained. Each pleural cavity contained about 3 oz. of brownish-yellow fluid which on chemical examination for atebrin gave a positive reaction. The lungs were yellow and œdematous, and the pericardium contained about an ounce of yellowish fluid which also gave a positive chemical reaction for atebrin. The epicardial fat had the characteristic yellow colour; the myocardium and the valves showed no naked-eye changes. No free fluid was found in the peritoneal cavity. The liver was moderately enlarged and was congested. Histologically there was accumulation of malarial pigment in the interstitial tissue and in Kupffer cells; there was also an increase of interstitial tissue. The spleen was enlarged and slaty in colour. A stained smear showed malarial pigment but no parasites; the pigment was irregularly distributed throughout the organ within reticulum cells. Secondary follicles of the malpighian bodies showed fatty degeneration, the splenic pulp contained a certain amount of blood and also some areas of hæmopoietic tissue. The kidneys were coloured yellow, but no other macroscopic change was seen. Microscopically there was proliferation of the cells lining Bowman's capsule, forming several layers of cells. The glomeruli showed no marked lobulation; there was fatty infiltration of the tubular epithelium. No malarial pigment was seen. The contents of the urinary bladder contained no atebrin or bile.

Test for atebrin.—The method adopted for the demonstration of atebrin was as follows. Ten cubic centimetres of the fluid, if not already alkaline, is alkalinised by adding potassium carbonate. Amyl alcohol (2 c.cm.) is then shaken up with the alkaline fluid, and the presence of atebrin is recognised by the green fluorescence of the alcoholic extract when held against a black background.

The high concentration of atebrin in the tissues and tissue fluids as found at autopsy is in striking contrast with the absence of even a trace of atebrin in the urine either before or after death. It is hard to explain why it was that this drug failed to pass the renal filter, especially as examination of the kidneys reveals no very advanced lesions.

It seems difficult to be certain beforehand whether a patient will react badly to atebrin, and also difficult to increase its excretion once a full therapeutic dose has been injected. These are serious disadvantages to the extensive use of atebrin by injection.

We acknowledge with thanks our indebtedness to Prof. E. K. Wolff, of the Ceylon Medical College, for his post-mortem notes and his report on the microscopical sections.

UNUSUAL SUBCUTANEOUS RHEUMATIC NODULES

By George Davison, M.D. Durh.
MEDICAL REGISTRAR, ROYAL VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE

It is many years since the subcutaneous rheumatic nodule was first described, and its nature and significance are widely appreciated. The typical rheumatic nodule varies in size from "a pin's head to an almond"; it is seen over bony prominences and tendons; it is not attached to the skin, and may or may not be fixed to the underlying bone—this probably depending on whether it is situated in a tendon sheath or aponeurosis, or whether it is subperiosteal.

Once thought to be a fibrous structure, the nodule is now known to be a focus of low-grade inflammatory change. Histologically, it shows a structureless background, generally believed to be composed of fibrin; this is invaded by granulation tissue, and is widely infiltrated with cells, chiefly macrophages, plasma cells, and lymphocytes. The structure is thus similar to that of the Aschoff nodes seen in the myocardium. Findlay[1] considers that there is also œdema of the tissues composing the nodule; this would account for the ease with which it can be palpated below the skin as contrasted with the difficulty experienced in dissecting it out at post-mortem or biopsy. The presence of nodules usually indicates active carditis and seriously affects the prognosis. This, of course, is readily understood when the nature of the nodules is considered; they are manifestations in the subcutaneous tissue of the same inflammatory process as is occurring in the heart. The following case is recorded because of the unusual nature of some of the nodules present.

A boy, aged 8 years, was admitted to the Hospital for Sick Children, Great Ormond-street, under the care of Dr. W. J. Pearson on Dec. 15th, 1934. In the previous June he had had tonsillitis and swelling of his hands and ankles. In July he had had scarlet fever. Since then there had been some swelling of his ankles, elbows, and knees, with pain on movement; he had tired easily and become breathless on exertion; twitching of his arms and legs had been noticed, and small nodules seen on his hands and feet. There was no previous history of rheumatic fever. On admission he was seen to be a fairly nourished but rather pale child. Typical rheumatic nodules of the type described were present over the occiput, right acromion, elbows, knees, and the extensor tendons of both hands and feet. Some of the occipital nodules were large (Fig. 1); some were freely movable, others attached to the skull. The temperature was 101° F. and the pulse-rate 135. His heart showed evidence of an old-standing mitral lesion; the apex-beat was half an inch outside the nipple line, and a loud blowing systolic and short diastolic murmur could be heard in the mitral area.

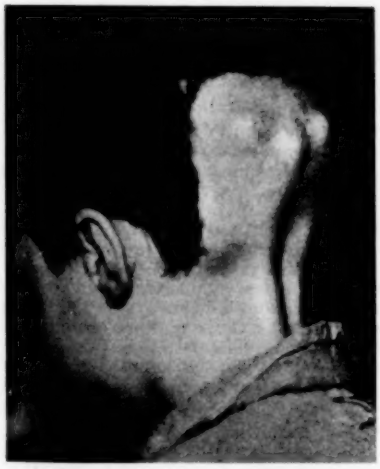

FIG. 1.—Occipital nodules.

The temperature fell to normal in a week, and in a fortnight the pulse-rate had fallen to a range of from 90 to 110. The boy's general condition improved, but the nodules increased slightly in size. The improvement continued for a month, but on Jan. 14th, 1935, slight choreiform movements of the left arm were noticed, lasting for a few days. The temperature rose to 100° F. for two days, and the pulse range to from 100 to 140 for a week, after which it settled to from 90 to 100. On Jan. 24th three large nodules of unusual type were noticed, appearing suddenly and reaching their full size in a few days; they were symmetrically placed over the lower part of the back, one over each posterior superior iliac spine and one in the midline over the lower part of the sacrum (Fig. 2). They were about one inch in diameter and were firmly fixed to the underlying bone, though the skin over them was freely movable. These nodules remained unchanged for about three weeks and then gradually receded, while the other rheumatic nodules became smaller and less numerous.

FIG. 2.—Two nodules over the posterior-superior iliac spines and one in the midline. The patient is seated with his back to the camera.

A series of estimations of the erythrocyte sedimentation-rate was made by Dr. W. W. Payne. On admission it was raised to 44 mm. per hour (Payne's micro method); it fell to 19 on Jan. 9th, but had again risen to 36 on the 14th, at which time the temperature and pulse-rate also were raised and the choreiform movements noticed. It then slowly fell, being 9 on Feb. 4th, after which it rose slowly to reach 21 at the beginning of March.

The special feature of this case is the presence of the three large nodules over the sacrum. Nodules of this type must be exceedingly rare, but it is interesting to note that, in an illustration to a paper by Cheadle in 1889,[2] three large nodules are depicted in exactly the same situation as those described above. Unfortunately no special reference is made to them in the text. Cheadle states, however, that large nodules are sometimes seen, but that they appear gradually and have an existence of months. The rapidity of formation of the nodules in the present case was striking. It can most readily be understood if one accepts Findlay's view on the presence of œdema. Like all rheumatic nodules, these swellings were painless; this is rather surprising in view of their rapid formation, especially considering their subperiosteal situation, which their fixity to the underlying bone would argue. It is interesting to correlate the time-relationships of the nodules to the other evidences of activity. Their appearance

was preceded by a phase of activity as evidenced by a rise of temperature, pulse-rate, and sedimentation-rate. When the nodules were first seen, however, this activity was already settling down; the temperature was normal, the pulse-rate had settled, and the sedimentation-rate had fallen almost to normal.

I am indebted to Dr. Pearson for permission to publish the case, to Dr. Payne for the estimations of the sedimentation-rate, and to Mr. Martin who took the photographs.

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A CASE OF FATAL MENSTRUATION

BY E. M. R. FRAZER, M.D. Edin.

ON Jan. 6th, 1935, I was summoned about midday to see a domestic servant who had collapsed when at work for no apparent reason.

Aged 25, she had never had medical attention and was said to have had no illnesses beyond a vague reference to anæmia. Menstruation had begun at 16–17 years of age, and the periods had been regular but scanty. In the summer of 1934 she had no periods for three months, but they subsequently recurred and were regular at monthly intervals till December, 1934. The last had commenced on Dec. 27th, and she had gone about her work as usual, without pain or even discomfort. On the evening of Jan. 5th she felt very tired, but got up and went on with her usual work on the 6th. Just before midday she fainted and her employer sent her to bed.

When I saw her it was at once obvious that she had lost a great deal of blood; she was very white and restless. The temperature was normal, the pulse 110 and thready; there was no pain. The hymen was intact, and after removal of a small vaginal clot the os admitted the tip of one finger, with difficulty. The uterus was small, and there were no signs of pregnancy. Treatment for the moment consisted in packing the vagina, raising the bed foot, injecting pituitrin, and taking general measures against shock. Her hæmoglobin was 40 per cent., but to my later regret I did not do a blood count.

At 8 P.M. the general condition was much as at midday, but there had been further loss of blood about 7 P.M., and she was taken into hospital. Without anæsthesia the cervix was dilated; the uterine mucosa was normal in appearance. The cavity was packed and intravenous saline administered. At 10 A.M. next day she became very restless, and after sudden unconsciousness the jugular veins were much distended. She died about 11 A.M. with signs of cerebral thrombosis.

Post-mortem examination showed a uterus without any pathological changes, and thrombosis of the lateral sinus.

I have not been able to find any similar case on record in this country, but in 1925 van Vugt[1] described one in which a girl of nearly 16 died a week after the beginning of her second period.

After slight injuries, her skin was often covered with blue spots; she suffered from nose-bleeding, and she had been treated for congenital syphilis. There was a deficiency of blood-platelets and coagulation was delayed. The uterus was normal and the liver and spleen not palpable; autopsy was refused. Van Vugt rejects the diagnosis of hæmophilia because, even if its existence in women is admitted, there are too many contrary findings—e.g., the deficiency of platelets. Moreover the stepmother distinctly stated that clots were present. He suggests thrombopenic purpura as a likely cause, although the patient's syphilis should not be forgotten.

In my own case the patient had menstruated for about nine years regularly. She had had no previous illnesses and had always been able to work. The uterus was obviously virgin, and although she had missed three periods last year she had not been incapacitated from work by the fourth—i.e., there had been no abortion. She had had no occasion to seek advice about her "anæmia," which was apparently manifest only in scanty periods and occasional lassitude and breathlessness. Although the percentage of hæmoglobin was low, and no cell count was taken, it is difficult to believe that she could have had any severe anæmia and yet be able to perform her normal work.

Burton-on-Trent.

[1] Vugt, D. van: Nederland. tijdschr. v. geneesk., 1925, ii., 352.

MEDICAL SOCIETIES

ROYAL ACADEMY OF MEDICINE IN IRELAND

SECTION OF OBSTETRICS

A MEETING of this section was held in the Royal College of Physicians on Oct. 18th, Dr. J. S. QUIN presiding.

Carcinoma of the Uterus

Dr. BETHEL SOLOMONS showed three specimens of carcinoma of the uterus, all operated on between August and September, 1935.

CASE 1.—Miss A., aged 52, unmarried, never had trouble with her menstrual periods until four years previous to admission when irregularity might be reasonably expected. For the past year the hæmorrhage had become more severe. She had no other gynæcological trouble. Examination revealed a slightly enlarged uterus, and a diagnosis of carcinoma was made and hysterectomy was done. Dr. Bourke reported on the specimen that the uterine cavity was distended by a cauliflower-like mass; microscopically the growth showed adenomatous polypi which in places suggested a malignant change. The condition was a carcinoma of the body of the uterus of an adenomatous type.

CASE 2.—Mrs. B., aged 57; married 17 years; nullipara. She had had two large ovarian tumours, believed to be malignant, removed in the country in October, 1932 and 1933. Her only complaint was of a discharge. On examination the uterus was found to be lying back and apparently fixed; the curettings were macroscopically and microscopically malignant. Total hysterectomy revealed a uterus which when freed from adherent small intestine was the size of an eight weeks' pregnancy. The patient did well for eight days and then jumped out of bed when unobserved for a few moments. That evening the wound burst open and about 4 inches of small intestine extruded. The abdomen was closed and drained and she did very well after a stormy convalescence. The report on the specimen was that of a typical adenocarcinoma of the body of the uterus, infiltrating the muscle wall, and proliferating into the cavity of the uterus, and extending down towards the cervix.

CASE 3.—Mrs. C., aged 59; married 32 years; six children. Complained of a yellow discharge (three months), later blood-stained, and pain in the side. There was no loss of weight. Bimanual examination showed a much enlarged boggy body of the uterus with a normal cervix. Total hysterectomy revealed an endocervical carcinoma, the pathological report suggesting that the solid carcinoma in the uterine cavity was probably an extension from the cervix.

Dr. Solomons raised the question whether a diagnostic curettage should be done in suspected carcinoma of the body of the uterus. In his view this

should be avoided unless the diagnosis was doubtful. He commented also on certain points in the technique of total hysterectomy for carcinoma of the body of the uterus. The vagina was plugged with gauze soaked in 3 per cent. picric acid, and if it was known that the uterus was septic or malignant the cervix was sewn up. During the operation no cutting or forked instrument of the volsellum type should be placed in the uterus. Usually clamps placed on the broad ligaments acted as effective tractors, but in Case 2 these would not hold owing to the previous removal of the adnexa. He had sometimes used Bonney's myomectomy clamp to avoid spill. In Case 3 if this endocervical condition had been apparent Wertheim's operation would have been done, but the body of the uterus was much enlarged and corporeal carcinoma seemed to be the correct diagnosis. The enlargement of the body proved to be due to a pyometra. Deep X ray would now be used in this case.

The PRESIDENT said that in Dublin they were very fortunate in having a very low percentage of malignancy in the uterus compared to other centres. He was inclined to agree that the prognosis in the first case described was excellent. As to the second case, two of his own patients had been given prophylactic deep X rays after a total hysterectomy, and had now survived one for three years and the other for four years. Dr. Wilfred Shaw had said that in cases of ovarian malignancy he very seldom found a spread of the disease to the uterus.

Dr. F. S. BOURKE said the first case had not at first looked malignant, but sections revealed a definite adenocarcinoma. The third case was probably a spread from the cervix.

Dr. D. J. CANNON objected on general principles to a curettage in malignant cases. In doubtful cases he had no hesitation in doing a hysterectomy and making a diagnosis afterwards. It was important in operations for so-called functional uterine bleedings to split the uterus and see that carcinoma was not present. If in doubt he did a complete hysterectomy and removed the ovaries from both sides before closing the abdomen. It was only lately that radium was supposed to be indicated in cancer of the body of the uterus.

Dr. G. C. DOCKERAY said that a section from the endometrium in the third case suggested to him a typical squamous carcinoma spreading upwards.

Dr. R. M. CORBET said that it was not possible always to make a diagnosis of carcinoma from a naked-eye specimen, and if a diagnostic curettage was not done, it would be necessary to do a total hysterectomy in every doubtful case.

Dr. BETHEL SOLOMONS, in reply, said that he believed that the small number of cases of carcinoma of the cervix in the Irish Free State was due to good midwifery and the practice of performing trachelorrhaphies and amputations of the cervix. He did not believe in the necessity for deep X ray therapy after hysterectomy for carcinoma of the uterine body, unless there was a suspicion that the whole trouble had not been eradicated. In malignant disease of the ovary there was no need to remove the uterus or the other ovary unless either was involved. He did not agree that diagnostic curettage could be dispensed with, but if the diagnosis of the corporeal carcinoma could be made with certainty, curettage should not be done, as it might cause implantation metastasis. He preferred hysterectomy to radium for cancer of the body unless the woman was suffering from grave constitutional disease.

Removal of Very Large Fibroids

Dr. CANNON showed a very large cervical fibroid which he had removed by abdominal section. The tumour was quite the size of a seven months' pregnancy, and it had a small fundus of the uterus on its upper pole. It was encapsulated, the capsule containing very many large veins. It was found possible to get inside the capsule and enucleate the tumour. Hysterectomy was then performed. Dr. Cannon also showed a large submucous fibroid, removed per vaginam by morcellement because it was sloughing and highly infected.

The PRESIDENT congratulated Dr. Cannon; specimens such as those were usually only seen as post-mortem specimens.

Dr. O'DONEL BROWN said that in a case of a sloughing submucous fibroid he thought there might be danger in removing the fibroid through the abdomen.

Dr. CANNON, in reply, said that the advantage of a small hospital like the one in Kildare to which he was attached was that there was no need to hurry patients away in order to make room for others. The patient from whom the second specimen was taken would certainly not have stood the operation unless she had had some preliminary treatment.

Dr. R. M. CORBET read a communication on

Surgery in the Pregnant

This was based on nine recent patients who had required operation during pregnancy and had all carried to term. The chances of abortion following operation were much less than was popularly believed. He stressed the necessity for early diagnosis and close coöperation between the surgeon and the obstetrician. The percentage of abortion following operation was little higher than the average incidence of abortion, except in operations on the uterus and adnexæ. The maternal mortality of operations undertaken in the early months of pregnancy was no worse than the mortality in the non-pregnant state, but the mortality in the last three months was increased by the difficulties of diagnosis, the technical difficulties of abdominal surgery, and the ease with which peritonitis spread. In his view the best results would be obtained by immediate operation in acute conditions irrespective of the period of pregnancy.

The PRESIDENT said that the view that it was fatal to operate on a pregnant woman died very hard. This and the view that a patient could not travel because she was ill were responsible for a great number of deaths. The danger of appendicitis in women who were approaching full term was peritonitis, and this was due to the fact that it was very hard to get anything like full drainage. He personally thought that a pregnant woman probably had more resistance than a non-pregnant one. Mr. Maunsell had operated in 1925 for cancer of the rectum during pregnancy. Some of the basal anæsthetics should be very satisfactory in these cases, since they had no effect on the fœtus.

Dr. T. M. HEALY said that his own experience of surgery in pregnant women had been slight but fortunate. The only fatality he had seen had occurred in the puerperium due to appendicitis. Of six cases of appendicectomy in the early months of pregnancy none had aborted, nor had a case of perineorrhaphy done during pregnancy. He thought there was a great deal of nonsense talked about the danger of anæsthetics to the child.

Dr. R. W. SHAW did not think it mattered much

what anæsthetic was given to a patient provided she was in good condition; if she was not, gas-and-oxygen with some preliminary premedication, preferably morphia, was indicated. It was ridiculous to think that a pregnant woman with a bad tooth could not have it out for fear of an anæsthetic. Gynæcological, even more than surgical, cases required efficient preparation. The shorter the anæsthetic the better for mother and child in cases of Cæsarean section. The anæsthetic should not be started until everything was absolutely ready for carrying out the operation, and should be discontinued at the earliest possible moment.

Dr. O'DONEL BROWN mentioned a case in which the corpus luteum had been removed in early pregnancy.

Dr. BETHEL SOLOMONS wished Dr. Corbet had dealt with more cases of late pregnancy. In the early months operation should be done; if appendicitis was diagnosed in the eighth or ninth months operation should be performed, but if there was any reasonable doubt and it could be postponed with safety until after the birth this would be advisable. Cæsarean section should be performed immediately the patient was anæsthetised; too much anæsthetic killed the baby, and he had seen fœtal death following delay on the part of the obstetrician.

Dr. CORBET, in reply, said that the paper was not really on surgery in the pregnant but on the attitude of the obstetrician when faced with a surgical complication. He did not think that an anæsthetic had any ill-effect on the baby in utero, but bad effects might be produced in Cæsarean section by removing a deeply anæsthetised baby from the uterus. The size of the uterus at term prevented proper drainage, opened up a large area for peritonitis, and by its movements prevented any effective walling off of infection. The real problem was making up one's mind to call in the surgeon. Where the diagnosis of acute appendicitis could not be excluded, he was satisfied that it was safer to submit the patient to operation whatever the period of pregnancy.

REVIEWS AND NOTICES OF BOOKS

Principles and Practice of Medicine

Twelfth edition. By the late Sir WILLIAM OSLER, Bart., M.D., F.R.S. Revision by the late THOMAS MCCRAE, M.D., F.R.C.P., Professor of Medicine, Jefferson Medical College, Philadelphia. London and New York: D. Appleton-Century Company, Inc. 1935. Pp. 1196. 30*s*.

Osler in his life-time made his cherished text-book a classic, and the late Dr. McCrae, taking it over from him, tried always to preserve in it what was characteristic of Osler. In the main he has succeeded. Osler's medicine was essentially bedside medicine, built out of long and rich experience, based on morbid anatomy, and described succinctly with this great man's rare combination of enthusiasm and precision. Dr. McCrae's last preface begs us not to destroy the sweep and the unity of medicine by cultivating it too much in discrete specialties, and warns us against trusting in instruments and laboratory procedures to the neglect of bedside study. That is in the Osler tradition, which the text-book undoubtedly carries on, even though in the newer sections, of which this edition has a goodly number, the authentic Osler style must be lacking. The additions and alterations bring it fairly well abreast of current established opinion. There have been small changes in the general arrangement, but there is still no separate section for the virus diseases; psittacosis and vaccinia appear in the contents as infectious diseases of doubtful or unknown ætiology, although in the text their causation by filtrable viruses is explained. The chief lack in the book is the absence of references, either to the authorities so frequently quoted by name in support or illustration of statements, or to recent comprehensive monographs and papers to which the student may turn when he is specially interested in any disease. Given in small type these would not add too much to the size of the book, which has been kept almost unchanged, in spite of added material and thicker paper, by the use of a slightly smaller, yet bolder and more easily read type. But these are small matters; it is to be hoped that "Osler" will long continue as a favourite on the student's bookshelf, and that the student will not cease to appreciate the principles and practice of a medicine in which the patient is more important than the disease.

Traitement des fractures et luxations des membres

Second edition. By JACQUES LEVEUF, Professeur agrégé à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Bretonneau; and CHARLES GIRODE and RAOUL-CHARLES MONOD, Chirurgiens des Hôpitaux de Paris. Paris: Masson et Cie. 1935. Pp. 442. Fr.50.

THIS text-book on fractures is the outcome of a practical course of instruction which was started by the authors in 1922 in Paris, while they were working under Prof. Pierre Delbet, who contributes a preface. He testifies to the great success of the course, which has since become a regular feature. The book is very well arranged, written, and illustrated. As might be expected, many of Delbet's special methods are incorporated, and in particular it is satisfactory to have a full account of the use of his method of plaster splinting of lower leg fractures. A modification of the method of fixation by the use of moulded plaster-of-Paris splints is described. Pieces of starched muslin are cut to the desired size and soaked in a plaster-of-Paris cream ("bouillie plâtrée"). Excess of plaster is scraped off with the edge of the hand, and the muslin impregnated with the paste is applied around the limb, and moulded on and held in position by bandages. A feature of the book unusual in recent text-books is the attention devoted to operative reduction and fixation of fractures. Though the modern tendency is to use open methods of treatment only as a last resort, it is convenient to find in regard to almost every fracture a description of the operative treatment. Much useful information is contained in the sections devoted to internal fixation, plating, and osteosynthesis. To the surgeon who has to perform these operations, the instruments described and illustrated will be of especial interest. The forceps described as Lambotte's are particularly ingenious. Throughout the work stress is laid on the principles to be kept in mind when each form of fixation is being used.

The non-operative methods of treatment recommended all seem sound and practical; the methods of fixation of the clavicle illustrated on pages 92 and 93 will repay study. In the reduction of dislocations of the shoulder-joint, the method of Kocher is stigmatised as a "brutal and dangerous procedure,

which ought to be explicitly forbidden." Prof. Delbet's method of reduction by continuous traction followed by slight rotation and pressure over the humeral head is described in detail. The section on first aid is rather too condensed. The volume as a whole is well produced.

Sedgwick's Principles of Sanitary Science and Public Health

Rewritten and enlarged by SAMUEL C. PRESCOTT, Sc.D., Dean of Science, and Head, Department of Biology and Public Health; and MURRAY P. HORWOOD, Ph.D., Associate Professor of Biology and Public Health. Both of the Massachusetts Institute of Technology. London: Macmillan and Co., Ltd. 1935. Pp. 654. 18s.

THIRTY-FOUR years have elapsed since W. T. Sedgwick, then head of the Massachusetts Institute of Technology, published his "Principles of Sanitary Science and Public Health." The book at once made its mark. It displayed an unusual grasp of the principles upon which effective preventive action must necessarily be based, a wealth of skilfully chosen illustrations, strong common sense, and a felicitous power of expression. In America it has long been an authoritative guide to students and health officers, and is recognised as a classic in the literature of public health. In Great Britain, though less well known, it has warm admirers, and no student or practitioner in the field of public health could fail to profit from its stimulating and suggestive teaching. After Sedgwick's death a new edition was long needed, and it has now appeared under the editorship of Dr. Prescott and Dr. Horwood, who worked with Sedgwick first as pupils and later as colleagues in the Massachusetts Institute. They had no enviable task; recent advances in public health theory and practice necessitated extensive revision, and the rewriting of a book so strongly stamped with personality as Sedgwick's "Principles" might well have daunted the most intrepid editor. The work has been done with discretion and, on the whole, with success. In bringing Sedgwick's subject matter up to date the editors wisely decided to make no attempt to emulate his style of writing; they have set out their additions in their own way, and it is a way of concise and lucid exposition, which should appeal to the general as well as to the professional reader.

What is of permanent value in Sedgwick's original chapters is retained. His account of the Broad-street pump cholera outbreak, for instance, the chief features of which should be familiar to all aspirants for the D.P.H., is reproduced, and is supplemented by details of more recent outbreaks of water-borne disease; for the editors have adopted Sedgwick's method of teaching by giving actual examples of how disease has been spread or prevented. The chief stress is laid on environmental hygiene, and those who imagine that Western civilisation is nearing complete success in this field of activity will be quickly undeceived by a study of this volume. Transport developments and rapid changes in social conditions and customs have, indeed, introduced new problems of sanitation. Mosquitoes and other living carriers of disease may now be rapidly conveyed through the air, and as the editors put it: "with the airplane and ocean liner knitting even the most distant and unfrequented areas of the earth closely together, the price of safety against yellow fever and other tropical diseases must be eternal vigilance." The spread of swimming pools, which in the United States increased from 540 in 1913 to over 5000 in 1929, and of holiday camps; the development of air conditioning, cold storage, and refrigeration; and the increase of noise in modern life are only a few of the factors which have added to the problems that a health officer must now be prepared to tackle. On these and other new problems this book affords sound guidance, and though many of its facts are drawn from American experience and have to some extent a special relation to American conditions, the principles they illustrate are of general application. Indeed, the information the book affords on public health work in the United States enhances its value to workers in this country; for in some departments—e.g., the protection of the food-supply and especially milk control—we have much to learn from what is being done on the other side of the Atlantic.

The book may be commended to all who desire up-to-date information on the conditions that threaten the health of modern communities and the means by which such conditions may be successfully attacked.

Preventive Medicine and Hygiene

Sixth edition. By MILTON J. ROSENAU, M.D., Professor of Preventive Medicine and Hygiene, Harvard Medical School. London: D. Appleton-Century Company. 1935. Pp. 1481. 42s.

Rosenau, which has now reached its sixth edition, has become a standard text-book in public health. It has never been allowed to show signs of obsolescence. In preparing the new edition the author, with many of his colleagues, has brought each part up to date, and careful reading shows that very little recent work of interest to public health workers has been missed. New subject matter has been introduced in relation to contraception, maternal mortality, heart disease, diabetes, ringworm, snake poisoning, psittacosis, periodic health examinations, and hospitals. Other parts have been extensively rewritten. As in most American books, the control of communicable disease and modern fields of public health work occupy the earlier pages, environmental hygiene following, but the latter subject receives very full consideration in several sections. An admirable feature is the list—sometimes long—of references at the end of each chapter, which include work done in other countries besides America. Medical officers of health and teachers of public health will find the new edition invaluable.

The Extra Pharmacopœia

Twentieth edition. Vol. II. Published by direction of the Council of the Pharmaceutical Society of Great Britain. London: Pharmaceutical Press and H. K. Lewis and Co., Ltd. 1935. Pp. 889. 22s. 6d.

FOR fifty years William Martindale, father and son, produced the "Extra Pharmacopœia," aided for a period by Dr. Westcott, and their self-sacrificing labour reduced to order and manageable compass references to outstanding original work and notable advances throughout the whole field of therapeutics. On the death of Mr. W. H. Martindale in April, 1933, the "Extra Pharmacopœia" as a personal production came to an end, and the Pharmaceutical Society decided to take over the responsibility for its continued issue. The revision was entrusted to the Codex Revision Committee, and Mr. C. E. Corfield, editor of the Codex, was appointed editor of Martindale. The "Extra Pharmacopœia" had long been divided

into two volumes, the first devoted mainly to treatment, the second to the analysis and assay of medicinal products. The twentieth edition of the first volume appeared in January, 1933, but the change in policy delayed the issue of the second volume which has only now appeared. The new editor has revised and largely rewritten the matter of this second volume, removing information no longer considered of value to medical practitioners, pharmacists, and analysts and replacing it by more useful accounts and researches into modern substances used in the treatment of disease. One cannot but regret the passing of a classic; in its new guise, however, the "Extra Pharmacopœia" will be found as indispensable as in its old.

Trattato di Anestesia

By A. M. DOGLIOTTI, Doc. di Patol. Chirug., Univers. de Torino. With preface by Prof. O. UFFREDUZZI. Torino: Unione Tipografico-epitrice torinese. 1935. Pp. 552.

THIS book reflects the greatly increased attention which is now given by continental writers to the theory and practice of general as opposed to local anæsthetics. About 200 pages of this work are given to general, as against about 300 to local measures, and considering the vast number of illustrations which accompany the latter this is giving an importance to general anæsthesia which is remarkable in a non-English volume of this kind. An introductory chapter contains a number of interesting portraits, including one of Henry Hill Hickman. The physiology of pain is lucidly discussed, and then the theory and physiology of the action of narcotic drugs; considerable space is devoted to the use of carbon dioxide. In the illustrations of the practice of inhalation anæsthesia the representation of a Clover's ether inhaler shows one of the old narrow-bore kind now rarely seen in practice in Clover's own country. This instrument is probably little used in Italy either; a regulating inhaler bearing the name "Dogliotti-Giordanego" pictured as well as the well-known Ombrédanne, which has long been in vogue on the continent, take the Clover's place. The most important section of this work for the British reader deals with spinal injection; here he will find described the method devised by Dogliotti himself and so enthusiastically adopted by some French authorities. This is the method of segmental peridural analgesia. Its technique is fully explained and its advantages over the usual endothecal injection are demonstrated. The author does not deny the difficulties associated with its use; he is apparently unaware of the device introduced by his French disciple in order to simplify the technique. The book is well printed and copiously illustrated.

Manual of Human Physiology

Fourth edition. By Sir LEONARD HILL, M.B., LL.D., F.R.S. London: Edward Arnold and Co. 1935. Pp. 470. 6s. 6d.

THIS little book does not pretend to be an authoritative work, but furnishes an excellent introduction to physiology for those who have received no special training in anatomy or the preliminary sciences. It has been brought sufficiently up to date in revision to continue to fulfil its purpose; the chapter on reproduction is a welcome addition from every point of view. There are now several semi-popular treatments of physiology available, and if asked wherein the present work differs from the rest one would cite its biological approach and its style. The first fifty pages are devoted to a consideration of life in general, and living organisms are placed in their correct relationship to the rest of the universe. Throughout the book no pains are spared to explain the fundamental scientific basis of the processes described, and if details of the latter are sacrificed on this account the reader may consider himself rather fortunate than otherwise. The style is vivid and the text well stocked with original illustrations and analogies drawn from everyday experience. The book should appeal to a wide range of readers, and will hold their interest.

Quarterly Journal of Medicine

THE October issue (vol. iv., No. 16) contains six papers.

ROBERTSON F. OGILVIE (Edinburgh) has inquired into the contention that in the early stages of obesity there is hyperinsulinæmia with increased sugar tolerance and that this is followed in course of time by hypoinsulinæmia with decreased sugar tolerance. He finds that sugar tolerance diminishes as the duration of obesity increases; the final state may be diabetes. In about a third of 65 obese subjects there was a preliminary phase of increased tolerance. It was observed that deficient ovarian function, premature exhaustion, or destruction of the ovaries produced a definite lowering of sugar tolerance, but whether this occurs in obese subjects only has yet to be determined.

In a study of ten cases of idiopathic steatorrhœa TH. E. HESS THAYSEN (Copenhagen) demonstrates that this derangement of metabolism is characterised by (1) an abnormally high excretion of fat in the fæces; (2) a normal or sometimes slightly increased nitrogen excretion; (3) a flat blood-sugar curve; and (4) a raised rate of basal metabolism. The steatorrhœa, however, is the primary manifestation. Among other problems he considers are the relation of hypovitaminosis B to the hyperchromic anæmia and the patches of pigmentation often observed in both tropical and non-tropical sprue and the variations in the possible ætiology of the flat blood-sugar curve frequently associated with these conditions.

MARJORIE GILLESPIE (London) has investigated the incidence of hypochlorhydria in asthma with special reference to age-incidence. Low free acidity was found in 51 per cent. of 109 asthmatics, and low total acid in 41 per cent. In allergic subjects there seems to be a tendency for gastric acidity to increase about puberty. Sensitivity as shown by skin tests had no apparent relation to hypochlorhydria, but improvement in acidity in originally hypochlorhydric cases coincided with clinical improvement.

I. HARRIS, E. WYN JONES, and C. N. ALDRED (Liverpool) have examined the pH, lactic acid, and alkali reserve values of the blood in different types of heart disease both under resting conditions and after a standard exercise.

An investigation into the skin reactivity to glycerinated veal broth and its bearing on the specificity of the tuberculin reaction is described by JULES FREUND and P. D'ARCY HART, working in New York. The importance of knowing whether false positive reactions to ordinary doses of tuberculin as a result of sensitivity to the glycerinated veal peptone broth used as a culture medium in preparing old tuberculin was made clear; since if the incidence of the false positive reaction was significant then the use of a control became imperative. It was possible to show that the occurrence of reactions to glycerinated veal broth did not affect the significance of the positive reactions to routine doses of old tuberculin, and that the use of broth controls in routine tuberculin therapy was unnecessary

RONALD V. CHRISTIE (Montreal) has studied certain types of respiratory neuroses. He is able to show that respiratory tracings taken with an ordinary recording spirometer are of value in the diagnosis and differential diagnosis of certain types of respiratory neuroses and that the incidence of these neuroses is much higher than was generally supposed.

An account is given of the annual meeting of the Association of Physicians held in London last June.

THE LANCET

LONDON: SATURDAY, NOVEMBER 9, 1935

MIND AND SKIN

THE work of the pioneer psychopathologists and psycho-analysts has already influenced medicine to an extent that can be estimated only by those who remember the outlook of pre-war days or are interested enough to study the text-books of those times. With the carrying out of the recommendations of the Curriculum Conference concerning the teaching of psychopathology in our medical schools, practitioners and specialists of the near future will accept as intrinsic parts of the clinical picture such factors as those described in two papers read at the summer meeting of the American Medical Association. These communications illustrate the growing influence of psychology on a form of practice with which it has at first sight little to do. In the first Dr. STOKES [1] gives a surprisingly long list of dermatoses in which a technique of "office analysis" is an important element in recovery. He believes that the type of personality rather than adventitious circumstances influences the cutaneous outbreak; thus "leaders, drivers, tyrants, and hypereffectives in general explode into the cutaneous neurogenous field under stress, excess or frustration." He describes the many signs that betray psychological tension and links these with conditions of vasomotor status and the sweat mechanism, anomalies of which may provide a background for the cutaneous mycoses. Other physiological reactions to stress occur in the sphere of gastro-intestinal function, and in turn induce allergic skin manifestations such as urticaria. But the special lesson STOKES would teach is the recognition and treatment of what he calls the neurogenic factor, and the fifteen years he has devoted to the development of technique have ripened a method of examination and treatment which he finds most helpful—though it needs "an extended and well-digested life experience," in the absence of which psychiatric effort tends to be a skeleton science of mind without flesh of human nature. He excludes from his method pronounced grades of warping of the personality, neurasthenic and psychasthenic collapse, or grades of conduct disorder demanding the use of the full psycho-analytic procedure. His findings reveal on the one hand temperamental or reaction types and on the other those conditions in the environment that seem to act as stimuli in producing symptoms. The distribution of these predisposing and exciting factors seems to vary greatly between one group of skin disorders and another, the "tension frame of mind" occurring, for example, in 41 per cent. of urticaria cases and being absent in rosacea, whilst in the latter chronic worry seems to predominate.

The authors of the second paper [2] have paid more attention to physical reactions, and, whilst giving validity to the investigation of the "psychomotor panel," assume the primacy of structure over function by postulating an inborn protoplasmic instability as the condition underlying all the phenomena concerned. This postulate is significant as indicating a fundamental attitude towards the age-long problem of animism versus mechanism, and Dr. STOKES's use of the word *neurogenic* where others would say *psychogenic* possesses the same significance. It is plain that the writers were, like most of us, educated in the mechanistic school but have been driven by clinical needs to study their patients as human personalities with emotional or instinctive drives and reactions; the use of a biochemical terminology does not invalidate that study.

Some apposite comments appear in the discussions that followed these papers. Dr. BECKER noted that medicine is in a state of transition in which internists, endocrinologists, and gastro-enterologists are gradually focusing their attention on so-called functional diseases; the work of Dr. STOKES was welcomed as a return to the art of clinical medicine. These papers are, indeed, indicative of a general movement which, whilst progressive, promises an equivalent of what has been lamented as almost a lost advantage—the experience and intuition of the family practitioner who "knew his patient's constitution." We see specialists coming to recognise that behind the processes of disease as revealed by the laboratory there are other processes which, though incapable of being weighed or measured, must yet be earnestly studied as elements of prognosis and treatment if not of diagnosis. It no longer suffices to note that such and such a condition occurs frequently in neurotic or highly strung people; the states thus described are capable of productive investigation, for which modern psychopathology offers a systematised and informed method of approach.

ACUTE PANCREATIC NECROSIS

THE ætiology of acute hæmorrhagic necrosis of the pancreas has been much discussed since the disease was first described by FITZ in 1889. There is general agreement that the basic process is a self-digestion of the pancreas due to activation of the trypsinogen it secretes. Normally this ferment is turned into active trypsin only after the secretion has passed from the gland into the duodenum and come into contact with the enterokinase of the succus entericus; and the reason for its untimely activation in acute pancreatitis is still in doubt. Some authorities find the explanation in infection, which may reach the pancreas either by direct extension (e.g., from a peptic ulcer) or via the blood stream or lymphatics. Blood-borne infection offers the best

[1] Stokes, J. H.: Functional Neuroses as Complications of Organic Disease; an "office" method of approach, with special reference to the neurodermatoses, Jour. Amer. Med. Assoc., Sept. 28th, 1935, p. 1008.

[2] van de Erve, J. M., and Becker, S. W.: Functional Studies in Patients with the Neurodermatoses, Ibid., Oct. 5th, 1935, p. 1103.

explanation of the cases in which pancreatitis complicates mumps or other acute fevers, while lymphatic extension has been held to account for the acknowledged relationship between pancreatic necrosis and disease of the biliary tract. The theory of bile retrojection depends on the fact that acute necrosis has been produced in animals by injecting normal bile into the duct during the period of digestive activity. The possibility is suggested that obstruction at the orifice of the duct, due to spasm of the sphincter of Oddi or impaction of a gall-stone, may lead to a similar state of affairs in human beings; but, as PARRY and MURRAY [1] point out, the anatomical arrangement of the ducts is seldom such as to allow regurgitation. Moreover, though it is common in cases of pancreatic necrosis to find stones in the gall-bladder, it is rare to find one in the common bile-duct; for example, HAWE [2] states that of 11 patients submitted to operation 7 had stones in the gall-bladder and none had stones in the duct. Another theory is that duodenal contents, containing the normal activator, enterokinase, may gain admission to the duct of Wirsung because of a lesion of the sphincter or the entry of a round-worm. Experiment certainly shows that pancreatic necrosis can be provoked by injecting duodenal contents into the duct. Trauma has sometimes been noted in the history, and the idea has been put forward that this is responsible either by leading to an effusion of blood containing activating substances, or by forcing duodenal contents into the duct. Where no other lesion can be found, vascular disturbance (thrombosis, embolism, or spasm) has been postulated as a cause. The conclusion seems to be that no one hypothesis will cover all cases. As Dr. DOBBS shows in a communication we published last week, the disease is by no means unknown in children, in whom several of the factors mentioned above can be excluded.

BROCQ [3] has well described the train of events started by the intraglandular conversion of trypsinogen to trypsin. The latter destroys indiscriminately acinar tissue, islets, and blood-vessels, forming a mixture of blood, free ferments, and products of proteolysis, at first confined to the gland but soon escaping into the peritoneal cavity. Absorption of the products of tryptic digestion results in severe intoxication and shock. The lipase produces those white flecks of so-called fat necrosis which are conspicuous at operation. The amylase has no local ill-effects; it is absorbed into the blood stream and appears in the urine. Destruction of insular tissue, if widespread enough, leads to disturbance of carbohydrate metabolism, with hyperglycæmia and glycosuria. At first, however, the typical case presents itself as an "acute upper abdomen" of very sudden onset. Comparing it with other abdominal emergencies TONDEUR [4] emphasises the rapidity with which the general condition deteriorates in pancreatitis. The patient, most commonly a woman, is usually fat and middle-aged and often gives a history of previous biliary disease, sometimes of alcoholism. The pain is epigastric, radiating to the back and sometimes to the left shoulder, and quickly grows more intense. There is vomiting and profound shock. Cyanosis is sometimes observed, and there may be bluish discoloration of the abdominal wall, due to altered blood. The abdomen is slightly distended and there is great tenderness in the epigastrium, especially just to the left of the midline. Rigidity is relatively slight, or may be absent; an indefinite mass may be felt in the epigastrium. In the less typical cases it is often impossible to differentiate between acute pancreatic necrosis and other acute intra-abdominal lesions. A high degree of leucocytosis is said to be characteristic, and certain chemical tests may assist diagnosis. According to BERNHARD [5] about 95 per cent. of cases show a notable increase of diastase in the serum and urine; in about 10 per cent., and in every severe case, there is glycosuria, and in 50 per cent. sugar tolerance is much reduced, a dose of 50 g. of glucose by mouth sufficing to produce glycosuria if this is not already present.

By way of remedy, early laparotomy is usually advised after careful preoperative treatment of shock. The chief argument against expectant treatment is that the diagnosis may be wrong; even if adequate drainage of the pancreas is impossible—as opponents of early operation maintain—and laparotomy possibly harmful, operation at least ensures that perforated peptic ulcers, for example, shall not go untreated because unrecognised. When pancreatitis is in fact revealed some surgeons rest content with the confirmation, but most will insert a drain down to the pancreas. In the presence of biliary disease radical treatment is usually best postponed; but cholecystostomy, with a view to relief of tension, may be done if thought advisable. TONDEUR thinks that aspiration of the gall-bladder is always a wise step if no signs of biliary disease are otherwise detected, for in one of his six cases he obtained purulent bile from an apparently normal gall-bladder. In any event, should the patient recover, radical treatment should not be too long delayed. Recurrence of the pancreatic lesion is not uncommon, and whatever may be the cause of pancreatitis the frequency with which biliary disease is found in these patients justifies the belief that it has something to do with the catastrophe. Another sequel to recovery may be diabetes mellitus; BERNHARD puts the incidence at 10 per cent. of non-fatal cases.

[1] Parry, J. R., and Murray, K.: Canad. Med. Assoc. Jour., 1934, xxxi., 592.
[2] Hawe, P.: Liverpool Med.-Chir. Jour., 1935, xliii., 105.
[3] Brocq, P.: Presse méd., 1935, xliii., 217.
[4] Tondeur, F.: Scalpel, Sept. 28th, 1935, p. 1209

AN INSTRUCTIVE ORGANISM

BOVINE pleuropneumonia does not attack human beings but the micro-organism which causes it is regarded with interest by workers outside purely veterinary medicine. The reason is that it is an example of a virus which is filtrable and yet (unlike other so-called filtrable viruses) capable of growing on simple artificial media. The fact

[5] Bernhard, F.: Deut. med. Woch., 1935, lxi., 667.

that it can be cultivated in this way has induced investigators to believe that its nature and mode of reproduction would be discovered relatively easily. That this belief is unjustified is amply proved by the many discordant findings published since 1898 when NOCARD and his colleagues first demonstrated the possibility of growing the virus. Indeed only now, after the lapse of nearly forty years, do we seem to be reaching the truth of the matter.

The story of the growth of our knowledge of this micro-organism deserves to be borne in mind by all who are studying viruses of unknown nature. The agent of pleuropneumonia first became known to us as an ultramicroscopic virus, which, however, was soon shown to be cultivable on artificial media. Probably as the result of successful cultivation investigators turned to the morphological examination of the virus with renewed confidence, and in 1910 two independent series of observations by BORDET and by BORREL and his colleagues showed that it was definitely visible with the microscope. The French workers described a variety of forms—star-shaped or asteroid bodies, coccal forms, and fine branching mycelial filaments—and struck by the importance of the first of these they proposed the name "Asterococcus mycoides" for this micro-organism. From now onwards repeated attempts were made to investigate the problem, with widely differing results. There is no need to set out the various findings which have been recorded, but putting aside those which questioned the possibility of seeing the virus, either in stained preparations or by dark-ground illumination, the striking thing has been the diverse modes of reproduction described; there seemed to be almost as many modes of reproduction as there were observers. The work of the last two years has gone a long way to clarify the situation. From a study of this organism and the closely allied one which causes agalactia in sheep and goats, LEDINGHAM [1] has given us a comprehensive picture of their modes of growth and reproduction. He relied mainly on fixed and stained preparations; in particular he studied the structure of colonies growing on solid media by means of impression preparations. He was able to identify almost all the forms seen by previous workers and showed that these were merely different forms of multiplication of a highly pleomorphic organism, which in his opinion has fungal affinities and should no longer be grouped with the viruses. He considers that the micro-organisms of bovine pleuropneumonia and agalactia belong to the family actinomycetaceæ.

Since LEDINGHAM'S findings appeared three more papers on the subject have been published. One of these, by MERLING-EISENBERG,[2] does not support his views, for EISENBERG concludes that the essential forms presented by the organism are elementary bodies and discs from which further elementary bodies arise by a process of budding; he suggests that the branching mycelium described by others is an artefact. The other two papers, one by TANG, WEI, MCWHIRTER, and EDGAR [3] the second and more recent by A. W. TURNER,[4] present observations which are in substantial agreement with those of LEDINGHAM. TURNER relied almost exclusively on the study of fluid cultures by dark-ground illumination and his paper is illustrated by beautiful photomicrographs. In some of these one sees branching mycelium which has every appearance of reality, and TURNER, like LEDINGHAM, concludes that the organism of bovine pleuropneumonia is highly pleomorphic and possesses a number of methods of reproduction. He hesitates to classify it with the actinomycetaceæ, and proposes making a new order—borrelomycetales—in which to place this and the closely allied organism of agalactia. But whatever systematic rank is finally decided on for these two organisms it is clear that they can no longer remain with the filtrable viruses; it is only the fact that one or more of their growth phases is sufficiently small or plastic to pass through filters that has been responsible for this erroneous grouping in the past.

[1] Ledingham, J. C. G.: Jour. Path. and Bact., 1933, xxxvii., 393.
[2] Merling-Eisenberg, K. B.: Brit. Jr. Exp. Path., 1935, xvi., 411.
[3] Tang, F. F., Wei, H., McWhirter, D. L., and Edgar, J.: Jour. Path. and Bact., 1935, xl., 391.
[4] Turner, A. W.: Ibid., 1935, xli., 1.

ST. BART.'s MEDICAL COLLEGE

THE PRINCE OF WALES was present on Tuesday at the annual dinner of old students of St. Bartholomew's Hospital which celebrated the opening of the new Medical College in Charterhouse-square for the teaching of pre-clinical subjects. Mr. W. Girling Ball, dean of the college, presided and there were 100 guests, including the Chancellor of London University and the Lord Mayor and Sheriffs, with more than 300 old students. The Prince recalled his visit two years ago and congratulated the dean on what had been accomplished in this time. "We take off our hats to you," he said, "for having got on with the job so quickly"; and speaking as "honorary perpetual student" of the college he welcomed the opportunities of study and research, of which he said, "neither could exist without the other." Mr. Girling Ball remarked that John Abernethy's school had gone on happily for nearly a century within the hospital walls, until the time came for an expansion for which no space could be found. It was in his second year of office that the Merchant Taylors, of which foundation he was a scholar, retired into the country, leaving the Charterhouse free. It had, he said, been a great effort, to which Bart.'s men themselves were contributing more than £55,000. In the near future the scheme was to be completed by the erection of a residential college on the site; "now," he concluded, "we are a real academic institution." The Lord Mayor, in reply to a toast, said that the Corporation of London was watching over the destiny of the school of St. Bartholomew's with a jealous care and regard, and on behalf of London University Lord Macmillan, chairman of the court, spoke of the achievement of an enterprise so full of vision. The work of research would be the great medical mission of the future; to-night, he said, we have seen another milestone passed. Lord Horder paid tribute to the drive, persistence, and indomitable pluck of the dean who had now realised one part of the vision that he had of the integration of medical education in London. Mr. Girling Ball, in reply, said it was the spirit of Abernethy which had always inspired him. On leaving Merchant Taylors to enter Bart.'s he had resolved to do something worthy of both.

ANNOTATIONS

EVOLUTION OF CILIARY ACTION

FORTY years ago Sir StClair Thomson and Prof. R. T. Hewlett communicated to the Royal Medical and Chirurgical Society their observations on the fate of micro-organisms in inspired air. Although hourly thousands of bacteria must in ordinary town life pass into the nose, it is rather unusual to find any in the cavities of healthy persons. The vibrissæ of the vestibules filter off most of the bacteria, the remainder being ejected later by the action of the ciliated epithelium. Since then Sir StClair has never ceased to work at the defensive arrangements of the air-passages, and his Semon lecture delivered last week at the invitation of London University summed up what had been discovered about the local means of protection in normal health. It would be easy to conclude either from previous knowledge alone, or under the influence of Sir StClair's persuasive address, that cilia are placed in the respiratory tract primarily to expel bacteria. But this would be only part of the truth, for cilia serve many purposes in the animal economy. Ciliary action depends on protoplasmic flow into and out of a curved tube; filling causes an effective or active stroke, with straightening, while emptying, during the recovery stroke, is an elastic recoil to the resting position. The action may continue independently of nervous impulses and may survive in a single isolated epithelial cell. The movements are conveyed directly from one cell to its neighbour, and also from cilium to cilium in individual cells. A somewhat similar movement may be observed in simple organisms such as amœbæ; the movements of the protoplasm cause temporary protrusions or pseudopodia. Cilia are permanent projections and represent a specialised mechanism for movement in many primitive aquatic animalculæ. They allow of more rapid progression than is possible with pseudopodia, as may be noticed by watching the activity of paramœcium. Cilia thus function as organs of locomotion, but other duties are performed by them. In molluscs and other invertebrates they maintain circulation of water in definite streams, so designed as to collect particles of food, or to serve respiratory purposes. Coming nearer to the subject of the Semon lecture, it is found that in the olfactory organ of some fish, such as eels, circulation of water through the primitive nose depends on ciliary action. The sense of smell is served by an olfactory rosette, with inlet and outlet, but entirely unconnected with the respiratory organs or alimentary canal. Constant circulation of water is required to carry in odours and prevent blockage by mud or other debris.

There can be little doubt that corresponding olfactory necessities call for a similar mechanism in higher animals. Many mammals depend for their existence on the detection of other animals in the neighbourhood. Thus carnivores scent their prey, while herbivorous animals—feeding with their tails to the wind—are warned by their sense of smell of the approach of enemies from behind. Their eyes protect them from attack in front and on the flanks. The eyes, thus occupied, may not be used to pick out suitable food, but the nose serves this purpose, as observed by watching oxen eating grass and avoiding intermingled buttercups. To keep the nose clean and the olfactory sense ready for the perception of fresh and possibly dangerous scents, the various stale odours and any obstructing solid particles must be removed. Odours go into solution in the nasal mucus before stimulating the olfactory nerve-endings. By means of the cilia this blanket of mucus is perpetually driven back to the nasopharynx, thus allowing new scents to be thrown into solution in fresh mucus, with stimulation of the olfactory nerve-endings. But while as a fact of evolution the nose is primarily an olfactory organ, the mechanism of ciliary movement, with constant backward flow of mucus, automatically removes from the nasal passages all solid particles, such as dust and gives protection against bacterial invasion. Mucus may inhibit bacterial action and phagocytes be ready to envelop them, but if all debris, including bacteria, are rapidly removed from the nose and conveyed through the gullet to the stomach, invasion by organisms is prevented.

The fact that the olfactory sense of man is comparatively feeble naturally diverts attention from the mechanism described, but, when considered in its true light, it opens up the question whether the nose merely looks after its own cleansing, or whether it is in addition a protector of the lower air-passages against bacterial invasion. The nasal fossæ in health are sterile, but from the nasopharynx of a healthy subject a variety of pathogenic micro-organisms may be cultivated. Many bacteria reach the lower air-passages, not only from the nasopharynx, but also drawn in through the open mouth, as during speech. The trachea and bronchi, however, have their own ciliary mechanism for removal of fluid or solid particles, including bacteria; such a mechanism is essential in air-breathing animals. In this connexion Sir StClair drew attention to the healthiness of many persons with permanent tracheostomy openings, emphasising their relative immunity from respiratory disorders. As regards the possibility of further evolutionary changes, it would be difficult to visualise a mechanism more efficient than ciliary action for scavenging immobile cavities such as the nasal fossæ, paranasal sinuses, or middle-ear cleft. The tracheobronchial tree also is efficiently served by cilia, for although its components are capable of varying degrees of closure by muscular action during expiration, yet they must be semi-rigid to prevent excessive or premature closure, with entrapping of air, as may occur in asthma.

A FATAL DISEASE OF SALMON

FURUNCULOSIS is a specific infective disease which has long caused much loss to the salmon and trout fisheries of this country. The departmental committee, appointed in July, 1929, by the Ministry of Agriculture, has just issued its final report,[1] having reached definite conclusions as to the distribution, cause, and means of spread of the disease. Two interim reports have appeared, one of which[2] contained a recommendation for preventing its further spread which has unfortunately not yet been acted on. The final report contains a summary of all the observations which have been made and of the experimental work done since 1929. Large numbers of fish have been examined for evidences of the disease and the presence of the *Bacillus salmonicida*, and experiments conducted in tanks and ponds have demonstrated means of transmission and the effect of external conditions especially the temperature of the water. The disease has spread considerably of late years; 31 areas of infection are

[1] Edinburgh: H.M. Stationery Office. 2s. 6d.
[2] THE LANCET, 1933, ii., 1435.

known in England and Wales, and 28 in Scotland. The evidence points to extension being due to the importation of fish from infected fresh waters and not to the entrance into rivers of diseased fish from the sea. Infection may take place as the result of contamination of the water or of food; crowding of the fish and a water temperature of 55° to 66° F. are the chief conditions favouring an outbreak. Of interest to pathologists is the occurrence of large numbers of apparently healthy carriers in which the specific organism is localised in the kidney. In these carriers the infection may remain latent for a long time, producing acute disease if the circumstances are suitable. Yearling fish and fry are remarkably resistant to infection. It has been shown that the eggs are not infected internally and can be disinfected with acriflavine without injury. The committee's main recommendations are that the Government departments should have power to inspect fish farms and to prohibit the moving of fish from infected waters, that the occurrence of disease or undue mortality among fish should be notifiable, and that live fresh-water fish should only be imported from abroad under licence. The maintenance of a laboratory for the examination of fish would be essential. A Bill introduced into Parliament in 1934 embodied these recommendations, but did not get a third reading. Considering the heavy loss from furunculosis and its progressive spread it is to be hoped that the Bill will soon be reintroduced and become law.

DIAGNOSIS IN RECTAL HÆMORRHAGE

THE importance of thoroughly investigating a case of rectal hæmorrhage lies not only in the fact that the bleeding may arise from such a serious source as a rectal carcinoma, but also that even when the cause is traced to internal piles, long-continued loss of blood may produce a severe anæmia. E. A. Daniels,[1] of Montreal, points out that this anæmia may seem to be out of proportion to the blood loss. Some patients are apparently incapable of compensating adequately for a steady and long-continued bleeding, while in others the loss of very considerable amounts of blood may produce no grave effects.

Early and excessive loss of blood is not a symptom of any common rectal disease except hæmorrhoids; in carcinoma it occurs rather late, though when it does arise it may be a most troublesome feature. In fissure-in-ano bleeding is occasionally rather sharp, but it occurs only when the fissure is torn open by the act of defæcation, and the usual history is that the blood just streaks the motions. The same tearing of the mucous surface may also cause bleeding in cases of stenosis of the anus. Fæcal impaction is another possible, though uncommon, cause of rectal bleeding. The hard, scybalous mass may damage the mucosa of the hæmorrhoidal area, and, owing to the rarity of this cause of bleeding, the findings may be wrongly interpreted, and the hard mass be mistaken for a growth filling the rectum. The symptoms of pain and pressure in the rectum, with bleeding, suggest either a growth or a fissure. Certain diseases of the colon may involve the rectum and cause bleeding from its surface. Such are familial polyposis intestini and colo-proctitis. Sigmoidoscopy will reveal the nature of the lesion and its upward extension beyond the rectum. Acute proctitis may cause such free bleeding as to block the view through the proctoscope. In acute amœbic entero-colitis, the onset, as Daniels points out, may be sudden, in a previously healthy person, and the bleeding from the ulcerated surfaces may be entirely missed. The colicky, right-sided abdominal pain may simulate appendicitis and even lead to operation in the absence of sigmoidoscopy, which reveals œdema, hyperæmia, and mucopurulent exudation, mixed with blood. Daniels mentions another type of colo-proctitis which occurs as a terminal complication of very severe illness, such as uræmia, typhoid fever, and septicæmia, and also in certain cases of avitaminosis; adenomata and papillomata and tuberculous proctitis are rare causes of bleeding which are easily diagnosed by sigmoidoscopy or proctoscopy. Daniels describes two varieties of internal hæmorrhoids, both usually amenable to cure by injection. In one, the appearance is of a redundant ring of veins, which prolapse into the proctoscope, and may, of course, prolapse below the anal sphincter. The three main hæmorrhoids are situated in the left lateral, right anterior, and right posterior positions of the anal circumference. Owing to the looseness of the attachment of the mucosa, the position of the hæmorrhoids varies with the position in which the patient happens to be examined. The second type of hæmorrhoidal lesion is a vascular ring, bleeding easily when touched and situated at the base of the columns of Morgagni. The treatment advised by Daniels is a submucous injection of 5 per cent. carbolic acid in sweet almond oil. In the second type of lesion the injections are placed into and just above the ring of vascularity. In the commoner type of definite varices the injections are made high up in the submucosa, and the solution distributed down to the base of the hæmorrhoids: 5–10 c.cm. are used at a sitting.

In the diagnosis of the cause of rectal bleeding, the important practical points are: (1) to rule out rectal carcinoma; (2) to determine the presence or absence of an anal fissure, as considerable acute pain may be caused by the passage of the proctoscope for the treatment of piles if the fissure is not first dealt with; (3) having diagnosed the presence of piles, to decide that they are not a complication of some such condition as portal obstruction or pelvic tumour; and also to satisfy oneself that the bleeding is indeed coming from the piles and not from a lesion higher up, such as peptic ulceration. The therapeutic test, of a few injections to cure the piles, followed by a careful watch for further bleeding, may be of value in doubtful cases.

URINARY INFECTIONS

THE symposium on urinary infections in the latest volume of the St. Bartholomew's Hospital Reports (1935) includes an account of the anatomy and physiology of the kidney by Mr. A. M. Boyd, and contributions from a physician, a surgeon, an obstetrician, and a bacteriologist. The result is a clear and useful survey of a problem with which almost every department of medicine is concerned. Dr. Geoffrey Evans supports one of the two main theories of the ætiology of urinary infection when he visualises, in the normal person, a regular or frequent passage of coliform bacilli in the blood stream to the kidneys and their excretion in the urine. He subscribes to the thesis, recently stated afresh by Dr. A. L. Clark,[1] that irregular action of the large gut is responsible for the persistent presence of *B. coli* in the urine of some patients. Mr. J. Beattie, however, discussing urinary infections associated with pregnancy,

[1] Canadian Med. Assoc. Jour., September, 1935, p. 287.

[1] Amer. Jour. Surg., 1935, xxix., 354.

expresses the belief that the organisms may reach not only the bladder but also the ureters and renal pelves by spread from below, and he brings forward statistical evidence in support of this view. There is now general agreement that, by whatever route the organisms may reach the urinary tract, they do not normally settle there except in the presence of some underlying obstructive lesion. The importance of a thorough investigation of every case of chronic urinary infection has often been stated, but no stronger argument in support of the need of complete urological examinations can be brought forward than the figures collected by Mr. W. Girling Ball. He selected 50 cases of chronic infection of the urinary tract, not in a consecutive series, but chosen either because they had been unsuccessfully treated for a long time without ever having had a complete examination, or else because symptoms of infection were the most prominent feature. Cases of urinary infection with an obvious underlying cause such as an enlarged prostate or a renal calculus were excluded. The 50 cases were thoroughly investigated for some underlying lesion which might be converting them into "carriers," and in no fewer than 38 (76 per cent.) of the cases such a lesion was found. Unilateral infection of the upper urinary passages was found in more than half (62 per cent.) of the cases, of which all but three were associated with a predisposing factor on the side of the infection. The routine investigation consisted first of a searching clinical examination, with a bacteriological analysis of the urine, and then of cystoscopy, ureteric catheterisation, and an X ray of the renal tracts (including pyelography). It might be argued that it is not justifiable to submit every patient with a mild chronic infection to so exhaustive an examination; but it is a striking fact that of the 50 cases reported by Mr. Girling Ball, 33 (66 per cent.) were completely cured by the treatment, where necessary surgical, of the discovered lesions. When it is remembered that these cases were selected for their chronicity and on account of the absence of any obvious predisposing causes, these figures represent a remarkable achievement in the treatment of an obstinate infection. Dr. Clark has suggested [1] that if patients with infected urines were placed on the ketogenic diet before such investigations as ureteric catheterisation and cystoscopy were performed, unpleasant complications such as catheter fever might be avoided, and this suggestion is well worth consideration.

The uses and limitations of urinary antiseptics were discussed at the recent B.M.A. meeting in Melbourne (see p. 1076). Dr. L. P. Garrod's contribution to the Bart.'s symposium consists of a survey of the various urinary antiseptics in common use, and a comparison of the clinical and laboratory claims made on their behalf with the result of a test devised to measure their true antiseptic value by a study of the bactericidal power of the urine excreted by patients taking the drugs. Of the urinary antiseptics tested, hexamine alone produced a truly bactericidal urine, such as is excreted by patients on the ketogenic diet. Yet, as Dr. Garrod notes, though some forty years have elapsed since hexamine was introduced into medicine, "misunderstanding and misuse have given it a chequered career." Hexamine by itself is not bactericidal and only when, in an acid medium, it decomposes to give off formaldehyde does it exert any antiseptic effect. Though acid sodium phosphate is widely used with hexamine to increase the urinary acidity, the resulting acidity is rarely measured, and in fact the necessary degree is much more readily attained by the use of ammonium chloride. The control of urinary infections by medical treatment demands a careful supervision, not only of the patient, but of his urine. It is as illogical to hope for any effect to follow the administration of hexamine without ensuring that the urine becomes really acid, as it is to expect an acute urinary infection to respond to treatment with alkalis until the urine becomes alkaline.

UNRESTRICTED DIET FOR DIABETIC CHILDREN

SOME four years ago Stolte of Breslau recommended that diabetic children should eat whatever they like; and this recommendation is now supported by Prof. A. Lichtenstein [1] of Stockholm. Insulin, he feels, has been given too timidly, and even to-day its use is considered secondary to strict dieting, so that the child suffers all the hardships, physical and mental, of being rationed. In Friderichsen's words "from the psychological point of view, it is better to let the dosage of insulin be determined by the food than vice versa," and during the past two years Lichtenstein has let a score of diabetic children in his hospital and private practice enjoy a free diet. This is free both in kind and in quantity and the dosage of insulin is regulated in such a way that the general health is good, the gain of weight normal, and the urine is free from ketone bodies—glycosuria being permitted so long as weight increases satisfactorily. The ages of the patients ranged from 2½ to 16 years, and most of them were admitted to hospital so as to be under close supervision on passing from a restricted to an unrestricted diet. The transition proved remarkably easy, and the joy of patients and parents on the removal of all restrictions had to be seen to be believed; indeed the encouragement seemed to have a directly beneficial effect on the course of the disease. At first the children showed a voracious carbohydrate hunger which soon passed off, leaving them with an only somewhat higher carbohydrate consumption than when rationing was maintained. Thus, a 7-year-old boy who had been rationed to about 110 grammes of carbohydrate put away about 300 g. per day when allowed to eat what he liked, but later spontaneously reduced this quantity to about 200 g. So far from any ill-effects being observed, the sweeping-away of all dietetic restrictions seemed to be uniformly beneficial, to judge by an improved gain of weight and comparative freedom from intercurrent infections. The increased gain of weight probably depended not only on the increased supply of carbohydrates, but also on the total rise in the calories, children between the ages of 9 and 12 consuming 50–70 calories per kg. of body-weight. The dosage of insulin did not have to be raised correspondingly; there were cases in which it was not raised at all and some indeed in which it was actually lowered, though the carbohydrate intake had been doubled. Similarly, the excretion of sugar in the urine was surprisingly small. The frequency of the injections of insulin had to be increased from two to three a day, but on the credit side of the balance the risk of insulin overdosage seemed to be diminished.

The cases in which this therapeutic revolution was accomplished were by no means slight and mild; all the patients had been in coma or had threatened coma once or oftener. Prof. Lichtenstein is accordingly persuaded of the great merits of the unrestricted diet; but he has yet to prove its real advantage over the properly regulated intake of food. Admittedly insulin has not been used with sufficient boldness

[1] Nord. med. tidskr., August 31st, 1935, p. 1329.

and every diabetic child should be given enough food and enough insulin to enable him to live a normal life, feel perfectly well, and develop normally. But if this aim can be fulfilled is there anything to be gained by giving an excess of carbohydrate? The free diet must mean occasional big rises in blood-sugar and increased glycosuria, which are theoretically objectionable and certainly (one would suppose) should not be risked within a couple of years of the onset of diabetes. The disadvantage of three daily injections is also obvious, and the regulation of dosage cannot be very easy.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

THE first decade of the London School of Hygiene and Tropical Medicine is briefly surveyed in the annual report of the board of management to the court of governors. Since its establishment in 1924 an imposing building, complete with modern laboratory and scientific equipment, has been erected; post-graduate courses of study in bacteriology and immunology, biochemistry, epidemiology and vital statistics, public health, and tropical medicine and hygiene have been established and developed under the guidance of distinguished teachers; and the separate institutions for the study of tropical medicine and tropical hygiene, founded respectively by Patrick Manson and Ronald Ross, have been incorporated in the school. The report of the dean, Prof. W. W. Jameson, for the year ended July, 1935, records the close and happy relations maintained with other scientific and professional organisations and the practical value to the staff of this association. Full advantage has been taken during the year of the policy of encouraging members of the staff to visit tropical and sub-tropical countries for the purpose of conducting special investigations or studying local problems. For example, Sir Malcolm Watson has visited Central and East Africa; Dr. Wigglesworth, Malaya, the Dutch East Indies, and Ceylon; Mr. J. J. C. Buckley, D.Sc., Assam; Dr. R. Mellanby, Uganda; Prof. P. A. Buxton, Macedonia; and Mr. H. H. Clay, India. During the year 179 students enrolled in one of the regular courses of instruction in addition to a considerable number who attended for short periods of more specialised study. The work on the isolation of a chemical substance of high immunological value from *B. aertrycke* which is being conducted by Prof. W. W. C. Topley, F.R.S., and Prof. H. Raistrick, F.R.S., has proceeded most successfully during the year. The grant which Imperial Chemical Industries Ltd. made towards the cost of this investigation came to an end on Sept. 30th, 1935, and some anxiety is felt about the money necessary to continue what is regarded as one of the most important and promising researches of recent years. Prof. G. S. Wilson has completed a very thorough study of the various methods of assessing the bacterial content of milk and his report, which should be of great practical value, is about to be published. The investigation on the lethal effects of oil on mosquito larvæ is now in progress in Prof. Buxton's department; the cost of this work is being borne by three large petroleum companies. Attention is drawn by Prof. M. Greenwood, F.R.S., to the closer liaison between the division of epidemiology and vital statistics and official government departments; an inevitable result is that still more time has to be devoted by the personnel of the division to work which will either never appear in print at all, or, if published, will not be published over the names of the authors. Work of this kind is however regarded as an essential duty, since the division enjoys the confidence of various public authorities who rely upon the staff to give them frank advice on various statistical and epidemiological matters, knowing that the confidence will be respected.

THE AIR-SWALLOWING INFANT

THOSE who live on fluid alone are almost bound to gulp in air with it, and Lereboullet and his colleagues [1] think air-swallowing a common source of trouble in infancy. Vomiting from this cause may begin, they point out, in the earliest days of life, being seen more often probably in breast-fed than in bottle-fed babies. It may be explosive or merely regurgitant, and the milk as returned may be curdled or not, according to how long it has been in the stomach. The child's appetite is likely to be excessive, but after three minutes' greedy feeding no more food is taken until relief has been obtained by an eructative vomit. In the early stages of the disturbance the general state remains good; the stools are normal and weight may be gained despite the vomiting. If the right diagnosis is made all will be well; but only too often the vomiting is attributed to dietetic error, and the baby is made to try a series of foods and formulæ, culminating perhaps in a true breakdown in digestion, with the "diarrhœa and vomiting" syndrome. Since all babies swallow air with their milk it may well be asked why they do not all suffer in consequence. Lereboullet's answer is that some swallow more and some less, and it is the greedy baby who, rapidly distending his stomach, is most likely to vomit. The degree and speed of evacuation of the air both by the upper and lower openings of the stomach also varies greatly, and the position in which the child is placed after feeding makes a difference. As part of treatment the French authors recommend that after an attempt has been made to "get up the wind" by holding the infant in the vertical position for the usual period, it should then be placed on its left side for a quarter of an hour, after which it remains on the right side till the next feed. They also advise the use of thickened feeds, or even the introduction of the milk through an œsophageal tube. For the breast-fed baby, to whom this programme is inapplicable, they suggest a teaspoonful of condensed milk or of a thick farinaceous paste immediately before feeds. Possibly, however, a drink of water would be equally effective; and there is another measure, also favoured in this country, which gets only rather grudging notice—namely, a small dose of a sedative (such as chloral) just before the feeds. In practice this problem is of real importance, for weaning is far too often carried out merely because of excessive air-swallowing by a baby who is otherwise thriving. Robert Hutchison teaches that chronic vomiting can be ignored if an infant is gaining weight, and this rule applies especially to the kind of case under discussion.

THE TEACHING OF ANÆSTHETICS

A LIVELY discussion was provoked by the presidential address of Dr. H. A. Richards to the section of anæsthetics of the Royal Society of Medicine on Nov. 1st. The points which aroused most interest centred round the teaching of anæsthetics to the student. The difficulties which confront the teacher of this subject are perhaps more formidable than those which the teacher of any other clinical subject must

[1] Lereboullet, P., Lelong, M., and Aimé, P.: Presse méd., Oct. 5th, 1935, p. 1541.

face. It is a question of what Dr. Richards aptly called the anæsthetist's "divided loyalty." If he does his best for the student he cannot at the same time do his best for the surgeon and for the patient. At a given operation it may be desirable to employ an elaborate technique and a complicated apparatus. What use is this experience to the student who in a year or two will be engaged in general practice? He is not going to possess the apparatus or have any suitable opportunity of exercising or advancing his slight acquaintance with the technique. So far as he is concerned his need is to be given competence to handle simple methods efficiently and safely. Moreover, the greater his freedom to work without supervision the better for him—but often the worse for the surgeon, who may have to wrestle with the consequences of an insufficient narcosis, from which the patient may also suffer indirectly. Some anæsthetists untie the Gordian knot by cutting it. They say in effect "I do my best for the patient and for the surgeon. The result is I rarely employ methods which can be used by the general practitioner; and there is no harm in this, for the sooner all anæsthetics are given by specialists the better, and then the student will not need to learn the technique unless he wants to take up the specialty." It was clear from the discussion which followed that the teaching anæsthetists disagree even on so fundamental a question as the relative positions of ether and chloroform as general anæsthetics. Some teachers, like Dr. H. P. Fairlie, would rule out the latter altogether; others, whose views were well expressed by Dr. Ashley Daly, argue that in general practice it is practically certain that sooner or later chloroform will be handled and therefore the student must be made familiar with the proper way of using it if its dangers are to be minimised. Dr. H. P. Crampton further complicated the issue by advancing the opinion that chloroform should be employed only by the specialist, in whose hands alone it is reasonably safe. Anæsthetics seems to be in a transition stage; some of its experienced practitioners achieve such excellent results using the same simple drugs and apparatus for all cases that it is difficult to convince them that these could be improved. On the other hand, the modern member of an operating team has an armamentarium so varied that he alters his technique for every type of case and naturally doubts the wisdom of attempting to teach it except to an aspiring specialist. It will be long, however, before the custom of mutual aid in anæsthetics, especially for minor operations, dies out among practitioners, especially in country districts, and in the public interest some way will have to be found to procure the preliminary experience necessary for such work.

VAGINITIS

VAGINAL discharges have a name for being intractable; but a fair proportion of successes may be expected from the more discriminating use of remedies which is now becoming possible. This improvement in therapeutics depends chiefly on greater accuracy in diagnosis and better knowledge of causation. For example, Cruickshank and Sharman,[1] and others, have lately demonstrated the profound influence which the ovarian follicular hormone exerts on the vaginal epithelium, and it is now recognised that the susceptibility of the mucosa to infection varies according to the physiological changes induced by birth, puberty, marriage, childbirth, and the menopause. One result of these observations has been the attempt to utilise the ovarian follicular hormone (œstrin) in the treatment of vaginal infections, especially in the gonococcal vulvovaginitis of children, as described not long ago in our columns by Nabarro and Signy.[2] Reviewing the problem of diagnosis and treatment as a whole, Hubert Jacobs[3] of Melbourne emphasises the importance of the patient's position during investigation and takes the view that the dorsal position is the most favourable for thorough examination and the taking of specimens. His statement that gonococcal vaginitis is extremely rare in women is in accordance with accepted ideas; on the other hand, King and Mascall[4] have lately offered evidence that the gonococcus may persist for considerable periods in the adult vaginal fornices. In referring to gonococcal infections, Jacobs rightly demands a high standard in tests for cure; it should be pointed out, however, that reliance on examinations which do not include cultural and serological tests tends to leave a dangerous margin of error.

Vaginitis due to the flagellate *Trichomonas vaginalis* is very widespread and its diagnosis is easily confirmed by a simple microscopical test; but unfortunately many who treat these infections do not appear to realise this. Though the common practice of douching with the ordinary antiseptics is usually ineffective, there are methods of treatment which give good results, and elsewhere in our present issue Dr. Biskind describes a promising addition to those already available. Jacobs notes the occasional association of trichomonas infections and those due to the gonococcus; and recent experience in this country suggests that improved methods of gonococcal culture may prove this association to be common. Vaginal infections due to a fungus of the monilia group, termed variously apthous vulvitis, mycotic vaginitis, or vaginal thrush, are relatively rare, but are readily recognised clinically and with the microscope. The response to treatment is usually satisfactory, but their frequent association with glycosuria should not be forgotten.

ON Thursday, Nov. 14th, at the University of Durham College of Medicine, Newcastle-upon-Tyne, Prof. Ferdinand Sauerbruch, director of the Chirurgisch Poliklinik at Berlin, will deliver the annual address to the medical society of the University on the position of modern surgery in the light of history. On Friday he will address the Newcastle and Northern Counties Medical Society at 4.15 P.M., in the Royal Victoria Infirmary, on the development of thoracic surgery.

ON Thursday, Nov. 21st, at 4 P.M., Mr. W. Sampson Handley will deliver the William Mitchell Banks lecture at the medical school of the University of Liverpool. He will speak on the prevention of cancer.

ON Tuesday, Nov. 19th, at 5 P.M., Sir Walter Langdon-Brown will deliver the fifth Victor Horsley memorial lecture at University College Hospital medical school. He will speak on the integration of the endocrine system, and Sir Gowland Hopkins, P.R.S., will take the chair. Medical practitioners will be admitted to the lecture on presentation of their visiting cards.

[1] Cruickshank, R., and Sharman, A.: Jour. Obst. and Gyn., Brit. Emp., 1934, xli., 190.

[2] Nabarro, D. N., and Signy, A. G.: THE LANCET, 1935, i., 604.
[3] Jacobs, H.: Med. Jour. of Austral., July 27th, 1935, p. 101.
[4] King, A. J., and Mascall, W. N.: THE LANCET, 1935, i., 1492.

PROGNOSIS

A Series of Signed Articles contributed by invitation

LXXVI.—PROGNOSIS IN MIDDLE-EAR SUPPURATION

MIDDLE-EAR suppuration is met with at all periods of life from earliest infancy to extreme old age. It is responsible not only for an enormous amount of discomfort and suffering, but also for serious disabilities and, in many cases, gives rise to conditions whereby life itself is endangered. It is thus foolish to regard middle-ear suppuration as a trivial ailment, as was not unusual some years ago, and it is fortunate that in recent years a careful study of the ætiology and the natural course of the disease, together with the varieties of treatment and the alterations they have been found to effect, have improved the prognosis immensely in all directions.

In the vast majority of cases the infection reaches the middle ear via the Eustachian tube, although in sucklings there is reason to believe that the infection is more often blood-borne than in adults. The spread of infection from the pharynx or nasopharynx is usually the sequela of a cold or some more severe infection such as influenza or one of the specific fevers. Any unhealthy condition of the nasopharynx, for example adenoids, predisposes to the occurrence, and it has been known to follow plugging of the nasopharynx, or even of the nose after operations, or the entrance of blood or discharges into the Eustachian tube. The entrance of unclean water when diving or swimming under water is also a source of middle-ear suppuration.

Middle-ear suppuration occurs very readily in sucklings and infants as the Eustachian tube is comparatively short, wide, and straight, and in the early months of life the mucous membranes are very prone to infection. That the pharynx is often the site of infection is evident from the frequent association of an enlarged cervical gland and middle-ear suppuration. It is important that small infants should be kept from those suffering from the common cold, as a cold in the head, usually a trivial affair in adults, may be a serious matter in infancy. It would be a counsel of perfection to suggest that all young children suffering from colds should be kept in bed for a day or two, but if this were the rule, not only would the spread of infection be prevented, but the occurrence of middle-ear suppuration would be diminished.

When infection reaches the middle ear and suppuration occurs, the products of inflammation accumulate in the first place in the lower part of the tympanic cavity, the atrium. It will be remembered that the tympanic cavity may be considered as consisting of two parts, the lower or atrium, and the upper or attic. The atrium is a simple four-sided cavity lined by a thin adherent mucosa with very little connective tissue; the Eustachian tube opens into its anterior wall and its external wall is the tympanic membrane or ear-drum. The attic, on the other hand, is a complicated cavity, containing the ossicles and their numerous ligamentous connexions. These are covered over by folds or curtains of mucous membrane which further subdivide the cavity into compartments and which hang down and help to shut off this cavity from the atrium. The posterior part of the attic is directly continuous through the aditus into the mastoid antrum. The external wall is not a thin membrane, as in the atrium, but is formed by the thick bony squama.

When the middle ear becomes infected, the products of suppuration accumulate in the atrium, the Eustachian tube being closed by the congestion of its mucosa and the attic cavity mainly shut off by swelling of the mucous membranous folds of Tröltsch. As the pressure increases, the wall which offers the least resistance—namely, the external wall which is formed by the tympanic membrane—begins to show signs of the trouble behind it, and the subjective symptoms become correspondingly increased. These symptoms consist chiefly of earache and fever, whilst noises in the head are often complained of and deafness becomes noticeable. The pain may be sudden and sharp and often reaches a point at which it is almost unbearable, making sleep impossible. The temperature is raised and, in children, is often 102° F. and more. The general condition deteriorates rapidly owing to the fever, pain, and sleeplessness. The ear-drum shows signs of inflammation and is usually dark red in appearance. The usual landmarks are lost in the general swelling, which is most marked posteriorly and appears to cover the handle of the malleus. A definite bulge of the membrane is seen, most often in the postero-superior quadrant. The light reflex is lost. It should be noted that in very young infants this loss of light reflex may be the only sign in mild cases, and also that bulging of a normal membrane may occur when an infant cries, so that too much reliance should not be placed on this appearance in the very young. In the average case the accumulation of the products of inflammation behind the drum-head causes it to rupture, and this may occur within 24 hours after the appearance of the initial earache, or may be delayed for some days. If the drum is seen before it has ruptured and is bulging it should be incised. It is important that the incision should be carried upwards through the posterior fold and out towards the meatal wall. This will ensure better drainage from the upper compartment and help to prevent the further extension of inflammation. When the drum bursts or is incised there is usually an immediate cessation of pain and a fall in temperature. If the pain stops quickly it is a favourable sign and probably indicates that the suppuration is confined to the atrium as pain due to attic suppuration is much less likely to be relieved at once.

With rupture of the drum the atrium empties its contents into the external auditory meatus. As free drainage is established resolution of inflammation should occur and the prognosis should be favourable, unless adverse factors are at work, such as a very virulent infecting organism or some lack of resistance on the part of the patient. Old people seem to have a peculiarly low resistance to aural infections.

AFTER-TREATMENT

The object of after-treatment is to facilitate the discharge from the tympanic cavity through the perforation and to ensure that it is removed from the external auditory meatus and does not lie in a lake against the drum membrane. Efficient after-treatment can therefore influence the prognosis very materially. Many methods of after-treatment are adopted—an effective one is to place a gauze wick right down to the hole in the drum, changing it at frequent intervals, with gentle syringing and the

mopping or sucking out of discharge; but I prefer the use of dry insufflations of powder, such as a 1 per cent. iodine in boric powder, or Dimol, blown into the meatus each day after a thorough cleansing. The mass of dry powder against the drum seems to attract the discharge through the perforation very efficiently and it is quite extraordinary how much discharge the powder can absorb. The powder can be change once or twice daily. As the discharge diminishes, the congestion of the Eustachian tube subsides and this canal provides a supplementary drain for the escape of fluid from the middle ear. The prognosis with regard to ultimate recovery is good and the drum heals without an apparent scar. The outlook as regards the hearing is difficult to foretell, but is usually good, except in some of those cases in which healing of the drum is, for some reason, unduly delayed.

COMPLICATIONS

If the discharge persists for more than three weeks one may assume that the inflammation is no longer limited but has spread to the attic and, in all probability, to the mastoid antrum as well. It may be that the infection of the attic was a primary one, as in some cases the infection seems to pass through the atrium and infect the attic or even the mastoid antrum from the beginning. Be that as it may, the prognosis is now altered for the worse. We have seen that the lining mucosa of the attic hangs in folds across the cavity and this vascular connective tissue forms a suitable medium for the growth of organisms. Moreover, the opening of the aditus is comparatively large and any pus which is formed may take the line of least resistance and pass backwards into the mastoid antrum. This involvement of the mastoid occurs in about 25 per cent. of all cases of acute middle-ear suppuration and as this is dangerous, not only on account of the likelihood of chronic suppuration after the acute stage is passed, with damage to the hearing, it is most important that it should be recognised at the first possible moment. It will be remembered that, developmentally, the mastoid antrum is merely a backward extension from the upper part of the tympanic cavity and is present before any mastoid process or cells appear. It is not unusual for some tenderness over the antrum to be present in moderately severe cases of middle-ear suppuration and this usually disappears if the drainage from the middle ear is freely provided for, but if it persists or extends the implication is that the mastoid cells themselves have become infected, the prognosis is not so good, and the mastoid will require opening. Again, reappearance of the discharge after it has stopped or nearly stopped, or the persistence of a very profuse discharge with pulsation, indicates the likelihood of mastoid involvement, as does the continuance or recurrence of pain. The most characteristic sign is a sagging of the postero-superior wall in the deepest part of the meatus.

It would be beyond the scope of this short article to consider the further signs and symptoms of acute mastoiditis and it will suffice to say that, should the surgeon decide that the mastoid is involved, nothing is gained by delaying operation unduly. If the mastoid has to be opened, naturally the time of recovery is lengthened, but the prognosis with regard to ultimate repair of the middle-ear suppuration and the restoration of function should not be adversely affected.

CHRONIC SUPPURATION

It is a common experience that a certain number of cases of acute middle-ear suppuration become chronic, and it is sometimes difficult to say why this should be so. Neglect of treatment, constant reinfection by repeated colds, and the presence of adenoids are factors which favour the occurrence, whilst cases following measles and scarlet fever often fail to clear up quickly, as do some in which influenza is the source of infection.

It will be well to consider to what extent purely conservative measures are likely to be successful in the ordinary case of chronic middle-ear suppuration, and in what percentage of cases the prognosis is a good one. If after removal of adenoids and the adoption of some general cleansing measures for the ear suppuration still continues, a careful course of conservative treatment at the hands of an otologist should result in about 50 per cent. of ears becoming dry. There are many different methods of treatment but the one which gives the most satisfactory results is a modification of the dry method that is advocated for acute cases. In the chronic case it is advisable to clean the ear thoroughly, not only the external auditory meatus, but the middle ear also by irrigating it through an intratympanic cannula; the ear is then inflated by Valsalva's method to clear the middle ear of fluid, the meatus is again dried, and iodised boric powder is then blown in. In some cases polypi or small granulations may first have to be removed, particularly if the perforation is an attic one, and in these cases the prognosis is not so good, though many heal up quite satisfactorily. Some surgeons advocate the use of zinc ionisation, but I have not been able to satisfy myself that it yields superior results to the above method, and the cases in which it seems most successful—namely, those with large central perforations—are the very ones which respond most quickly to the more simple methods. If healing does not occur in two to three months it is probable that the suppuration is being kept up by some necrosis of the structures in the attic or in the mastoid, and a successful result is not likely to be obtained without a mastoid operation. It may be that a certain proportion of cases are doomed to this from the beginning and many of the most resistant ones may have a definite anatomical basis, as Arthur Cheatle suggested many years ago. He found from examination of a large series of temporal bones that in 20 per cent. of all people the mastoid process remains of the acellular type, and that when the middle-ear tract is infected under these conditions and complete resolution does not take place or other complications occur, the disease passes into a chronic stage which may continue indefinitely and be associated with more or less destruction of the tympanic structures and the formation of polypoid granulations and cholesteatoma. In these cases a mastoid operation is necessary if the cure of the middle-ear suppuration is to be effected.

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WEST SUFFOLK GENERAL HOSPITAL.—This institution at Bury St. Edmunds is embarking on an extension which will cost at least £25,000. At present there is only one ward for women and some of them have to be accommodated in the children's ward and in a small auxiliary ward. It is not always possible to separate the surgical and medical cases. The provision of a new children's ward is necessary and the present one can then be converted into a second ward for women. A private ward for paying patients is another urgent requirement.

SPECIAL ARTICLES

BRITISH MEDICAL ASSOCIATION

MEETING IN MELBOURNE

SECTION OF DERMATOLOGY

Dr. S. WATSON SMITH (Bournemouth) presided at a meeting of this section when Dr. HERMAN LAWRENCE read a paper on the incidence of

Skin Diseases in Australia

He compared the order of the commoner skin diseases in England, America, and Australia, and explained the reasons for these variations. Eczema, dermatitis, and seborrhœa occupied first place in all three countries. In England the second place was taken by ringworm, pediculosis, and scabies, whereas these hardly came into the picture at all in Australia owing to the difference in social conditions. The climate of Australia favoured an out-of-door life; the poorer classes lived in separate dwellings and had greater conveniences for personal cleanliness. In Australia the second place was filled by a group consisting of rodent ulcers, keratoses, and epitheliomata. This was due to two factors: (1) the increased amount of sunlight, and (2) the relatively low humidity. Adelaide had double the amount of sunlight and nearly half the humidity of London. In central Australia the average amount of sunlight was over 3000 hours per year, and the humidity under 30 per cent. The temperature was also much higher, rising to over 115° F. in the shade. The amount of ultra-violet light reaching the skin was therefore very great. Many of the patients had marked keratoses solares of the face, hands, ears, and forearms, without any signs of malignancy developing. After a history of the patient picking at the lesion, or perhaps of the application of CO_2 snow, one of the lesions would rapidly enlarge, and a frankly malignant epithelioma would develop. Italians and aborigines were almost free from these troubles. The hatless and sun-bathing cult, whilst lessening the likelihood of parasitic disease and skin tuberculosis, was a real menace in Australia as the cause of cancerous or precancerous lesions. Dr. Lawrence then described some rarer skin diseases of interest:—

Favus.—In 1917 a plague of millions of mice appeared in Queensland and travelled 1500 miles into South Australia. Some of the mice developed skin diseases which they passed on to human contacts. Many of the lesions were due to a parasite of the ringworm order, but the most troublesome ones from the point of view of treatment were due to an achorion—the *Achorion quinckeanum*. X ray therapy was of great value, especially in lessening the pain and shortening the time required for cure. Since 1917 there had been several minor troubles of this nature, and it was recognised that cases of favus, both in human beings and in mice, were more or less continuously present.

Dermanissus avium et gallinæ.—During the past 30 years Dr. Lawrence had many times found the dermanissus to be a cause of pruritus in patients who had nothing to do with poultry yards, and in several cases he had actually traced the parasite to abandoned birds' nests near windows. He suggested that *Dermanissus avium* was often to be found in nests, and was a more common cause of pruritus than was generally known; text-books made little or no mention of it. It was often difficult to trace the cause of the pruritus to these parasites, as they were nocturnal in their habits, generally hiding in the daytime. The nests of starlings, pigeons, and sparrows were most likely to harbour them.

"*Collision value.*"—When gamma rays from one direction collided with beta rays from the opposite direction, their combined action was termed by Dr. Lawrence "collision value." He made use of this action in the treatment of keratoses and rodent ulcers. The radium was held in monel metal holders and earthed. A high-frequency current was applied, with the patient standing on an insulated mat. In this way there was a a veritable battlefield of rays and particles up to about 1 cm. distant. The treatment was rapid and effective, but care must be exercised lest the absorbed beta particles produce necrosis of the tissues.

Dr. W. UPTON (Adelaide) in analysing 3000 cases, had obtained figures similar to those of Dr. Lawrence, but in his series scabies and ringworm were more common. One case in eight was in the keratosis—rodent ulcer—epithelioma group. Many of these were elderly women leading an outdoor life and using no cosmetics. He had seen 5 cases (in 25) of lupus erythematosus developing after severe sunburn. Grain itch was a common disease in South Australia. Lip cancer occurred in non-smokers after prolonged sunburn and cracking of the lips.

Dr. F. H. MAKIN (Adelaide) gave an analysis of 3000 patients treated at a cancer clinic. In these there were 1774 skin lesions, hyperkeratoses accounting for 456, squamous-celled carcinoma 431, and rodent ulcers 887—many patients had multiple lesions. In addition, there were 188 cases of lip carcinoma. Nearly all were proved microscopically. Multiple keratoses were best treated by X rays. Ringworm of the feet and dhobie itch were common in South Australia, and cases of scabies seemed to be increasing.

Dr. J. M. O'DONNELL (Perth) also found hyperkeratosis a common complaint, particularly on the gold-fields. Psoriasis, ringworm of the scalp, and dhobie itch were common, and scabies was increasing. An epidemic of grain itch had occurred amongst wharf labourers.

Dr J. WITTON FLYNN (Sydney) had found epidermophyton often enough to justify its inclusion in the 15 most common skin diseases.

Dr. J. H. KELLEY (Melbourne) had also found that sunburn predisposed to lupus erythematosus. Syphilitic diseases of the skin were now quite rare.

The PRESIDENT agreed that the low humidity and the increased amount of ultra-violet light might be factors predisposing to skin cancer. Favus was unknown in England but common in Scotland. Dhobie itch was frequently found in boys' schools.

Dr. J. IVAN CONNOR (Melbourne) read a paper on the treatment of

Staphylococcal Infections of the Skin

Numerous lesions, he said, were produced by staphylococci, but these tended to remain true to type, so that there were probably many different strains of the organism. Cases of sycosis rarely developed boils, and few cases of recurrent furunculosis developed sycosis, although the beard area must be contaminated daily. The numerous methods of treating staphylo-

coccal lesions suggested that none of them could be relied on to promote recovery in obstinate cases. For this reason research work had been done on the staphylococcal exotoxin. Some strains produced more than one toxin, and each of the toxins (alpha and beta) could evoke a separate antitoxin. These toxins could be differentiated by their action or the red blood corpuscles of the rabbit and sheep. The alpha toxin, which probably played the major rôle in human infection, was hæmolytic, induced dermonecrosis, and was lethal to animals ; it also had the power of destroying the white blood corpuscles, and so contained a leucocidin. By incubating virulent staphylococcal exotoxin with formalin for several days, a toxoid was produced which could increase the titre of circulating antitoxin as much as 20 times. This produced an immunity in animals and an improvement in the clinical condition in man. In the treatment by toxoid injection a small dose of 0·05 c.cm. was used, gradually increased weekly according to the patient's reaction and condition, and to the blood antihæmolytic titre. In a small percentage of cases, local, focal, and general reactions occurred after the early injections of the series. It was wise therefore to start with very small doses when beginning treatment, or on resuming injections after an intermission. Eight injections usually cured furunculosis, but sycosis barbæ often required many more. Forty had been given in one case (12 c.cm.). The toxoid lost 40 per cent. of its antigenic power in six months in the ice-chest. In a series of 23 cases of sycosis barbæ and sycosis nuchæ treated with toxoid, 12 were regarded as cured, and the rest so improved that they ceased to attend the clinic. Of 24 cases of other staphylococcal infections, mainly furunculosis, 18 were cured and the remainder much improved. Antitoxin, given in an acute infection, could be followed during convalescence by injections of toxoid to stimulate and maintain the natural antitoxin of the patient at a high titre.

Dr. F. G. MORGAN (Melbourne) described his work at the Commonwealth laboratories in producing antitoxin. At present the serum was polyvalent, but he hoped the time would come when a serum of high antigenic value for any particular type of staphylococcal infection could be produced.

Dr. JOHN C. BELISARIO (Sydney) read a paper on

Mycological Infections

Vesicular eruptions on the feet and hands, he said, were very common in Sydney. There were several clinical types : (1) superficial vesicular and (2) deeper vesicular, both these being on the fingers, toes, palms of hands, and soles of feet ; (3) localised type ; (4) scaling or eczematoid type ; (5) intertriginous type, remaining localised to the interdigital spaces ; and (6) hyperkeratoid type. Many of the vesicular manifestations represented an allergic reaction of the tissues to toxins liberated from primary foci of infection. The numerous ætiological factors—seasons, exposure, foods, orthopædic abnormalities, and so forth—might all produce their effect by altering the reaction of the sweat. Normal sweat had an acid protecting cloak, but the sweat of the hands and feet was neutral or alkaline, owing to the absence of sebaceous glands and lack of evaporation. Alkaline sweat appeared to favour mycelial growth. Working on this hypothesis, lemon juice was tried ; citric acid, apart from its effect on pH, also had a buffer action. The juice was used 4–5 times a day, in conjunction with liquor plumbi sub-acetate fort. and 1 per cent. hydrarg. ammon. dil. in lanoline. Irritation was dramatically relieved following this treatment, and the vesicles rapidly resolved. In the later stages, when eczema had supervened, ichthyol and salicyclic applications were employed, supplemented if necessary by fractional doses of X rays. An infective focus must be eliminated to prevent recurrence. When the fungus element had died out, and sensitisation to external irritants remained, removal of toxic foci and autogenous vaccines might help. Intravenous calcium therapy and high colon lavage were also used with success in these types.

Dr. J. WITTON FLYNN (Sydney) said that epidermophyton was very common in Sydney, many cases being symptomless and ignored by the patient. Dressing sheds and gaols were places where the infection was easily spread. To check the disease the spread from one person to another must be prevented by keeping the feet covered and dry, and by dusting with a mild acid antiseptic powder. The floors of dressing sheds must also be kept as dry as possible. Reinfection could be prevented by treating the chronically inflamed toe-nails and correcting orthopædic faults. Whitfield's ointment was, in his experience, of little value.

Dr. S. W. SHIELDS (Melbourne) thought the disease more prevalent now owing to the increased amount of sport and to the popularity of trips to the tropics ; moreover diagnosis was more accurate. The borrowing of towels in schools and camps was one of the common methods of infection. He had found Whitfield's ointment fairly satisfactory.

Dr. BUTLER (N.S.W.) said that at one time 90 per cent. of the military cadets at Duntroon had "Duntroon rot" between the toes. The use of lotio potassium permanganate before and after baths and boric acid between the toes produced good results, but where the nails were involved treatment was less effective.

The PRESIDENT thought that the variable results obtained with Whitfield's ointment might be explained by variation in its composition, and by the fact that some patients did not rub it in vigorously enough. Spiritous solutions of aniline dyes were well worth trying.

SECTION OF PHARMACOLOGY, THERAPEUTICS AND ANÆSTHESIA

Prof. SYDNEY SMITH presided at a meeting of this section when Sir WILLIAM WILLCOX opened a discussion on the

Use and Abuse of Hypnotic Drugs

He said that the advances in the study of hypnotics since 1913 included the discovery of many new derivatives of the barbituric acid series and the introduction of drugs other than alkaloids for basal anæsthesia. Insomnia was due either to psychological or organic causes and it was essential before commencing treatment to discover the cause. Hypnotics should be used only when absolutely necessary and when treatment by the usual general measures was unsuccessful. Patients taking hypnotics were likely to lose self-reliance and form the habit. Many operative cases did not require morphia or heroin, and as a routine they should not be administered post-operatively. Deaths from suppression of urine following their too free use were not uncommon. A dose of only 1/8 to 1/12 of a grain should be given, and repeated if necessary. The perfect hypnotic had

yet to be discovered. Sir William classified hypnotics into the following groups :—

Low toxicity group—e.g., bromides, alcohol, Phenazone, Pyramidon, phenacetin, aspirin.

Chloral and its associates.—Chloral was effective, safe, and rapid in action. Other drugs useful in this group were chloralamide, butyl chloral, chloralose, Chloretone, paraldehyde (freely diluted) and Avertin. Avertin was used extensively as a basal anæsthetic. It sometimes produced toxic liver effects.

Urea group.—Adalin was very safe and very useful. It was best administered in a dose of 10 grains combined with a similar dose of aspirin.

Sulphone group.—Sulphonal and trional were examples ; they were slow in action, uncertain, and toxic. Skin rashes and toxic symptoms were not uncommon following their use.

Barbituric acid group.—This group contained a great many preparations, whose toxicity depended on the molecular weight of the molecule combined with the barbituric acid ; the heavier the molecular weight the greater the toxicity. They were quickly absorbed, certain, and very good in selected cases. Idiosyncrasy was not uncommon. Thyrotoxicosis, asthma and its related diseases, affections of the kidneys, liver, and adrenals rendered patients highly susceptible to barbiturates, and these should therefore be used only after such conditions had been excluded by thorough examination. Sir William cited cases of fatal suppression of urine and heart failure following Luminal. Repeated taking of normal doses could produce curious manifestations amongst which were diplopia, squint, visual hallucinations, ataxia, and degenerative changes of the central nervous system. These were frequently attributed to cerebral tumour or other intracranial diseases. Accumulation of effects occurred, but chemically no accumulation in the tissues could be detected even after long periods of administration. Tolerance was not established to barbiturates, but the habit of taking them could be formed. They caused amnesia, and in this way could be responsible for suicide ; an actress had walked out of an open window following only a small dose of a barbiturate. In big doses these drugs not infrequently caused fatal pneumonia. Overdosage should be treated by bowel and gastric lavage, caffeine as a diuretic and drainage of cerebro-spinal fluid by lumbar or cisternal puncture. To cerebro-spinal fluid drainage many good results in treatment were attributed.

Alkaloidal hypnotics.—Morphia and heroin should not be used in the presence of hepatic or renal deficiency. In selected cases free but not prolonged use should be made of them, in adequate dosage. Apomorphine hypodermically was a good hypnotic in delirium tremens. It produced nausea followed by sleep.

Basal anæsthetics.—Amytal, Nembutal (grs. 5), Evipan, and others were useful but dangerous if idiosyncrasy existed. Sir William had seen a case of pneumonia after the administration of 3 grains of nembutal. In conclusion, he said that in prescribing a hypnotic or basal anæsthetic, one (or a combination) of the less toxic drugs should be selected. If a barbiturate were to be administered, the patient should be examined for the abnormalities likely to cause idiosyncrasy.

Prof. R. D. RUDOLF (Toronto) congratulated Sir William on his fair and moderate statement. He considered insomnia to be due either to increased irritability or increased irritation of the central nervous system. Hypnotics acted mainly by lessening this irritability, but some actually relieved pain directly. Measures to lessen noise and worry were of the utmost importance, and should be undertaken before employing hypnotics. He agreed with Sir William that aspirin combined with a barbiturate was very effective.

Dr. F. DAVIES (Melbourne) asked whether barbiturates should be used in cases of pneumonia.

Dr. N. W. MARKWELL (Brisbane) said that chloral and bromide were the best hypnotics in pneumonia, especially for the post-febrile insomnia. For post-critical delirium chloroform anæsthesia and gastric lavage were used, but he gave 1 drachm of bromide hourly until sleep ensued. One patient had been given 1 ounce in 12 hours. He asked Sir William what was the best hypnotic in this condition. He pointed out that in coronary thrombosis large doses of morphia could be safely given. In cases of threatened nervous breakdown he used barbiturates in adequate dosage and stopped their use gradually.

Dr. D. G. RENTON (Melbourne) asked if a second dose of paraldehyde was less effective than the first, and whether barbiturates ever caused excitement. He gave his own experience of amnesia for 24 hours following 12 grains of sodium amytal administered in divided doses ; in his own case morphia relieved pain but did not induce sleep. He confirmed the good effects of chloral and bromide.

Dr. W. SIMMONS (Sydney) asked what hypnotic Sir William recommended for the insomnia of pregnancy.

Dr. Z. MENNELL (London) said that he could not persuade Sir William to take a barbiturate for sea-sickness on the voyage out from England. Hedonal (not a barbiturate) was used frequently in Russia, where it was the cause of much pneumonia. He stressed the amnesia and the dangerous toxic symptoms produced by barbiturates in hypersensitive patients. Synergism played a large part and was well exemplified by the marked effect of small doses of morphia with barbiturates. Cerebro-spinal fluid drainage was of great value in treating toxic symptoms due to the barbiturates. Morphia was preferable to heroin because the former was less depressing to the respiratory centre. Depression to respiration by heroin was very marked when it was used in conjunction with evipan. Intravenous morphia was useful but great care was necessary.

Dr. B. L. STANTON (Melbourne) said there was an accumulation of effects following small doses of the barbiturates. This was evidenced by the marked effects produced by repeated small doses in the treatment of high blood pressure. The nervous irritability of children should be treated with small doses of barbiturates. He had treated a case of veronal poisoning with apomorphine, which did not produce vomiting but sent the patient into a deeper coma. This was evidence of synergism. The combination of codeine and aspirin was a good hypnotic and analgesic.

Dr. IVAN MAXWELL (Melbourne) said that ephedrine given in cases of asthma had often caused wakefulness, so he prescribed luminal or amytal as a sedative. Idiosyncrasy to small doses of aspirin was common in asthmatics, but no sensitivity to it was demonstrable in skin tests. He inquired whether luminal or bromide was preferable in the treatment of epilepsy.

Sir WILLIAM WILLCOX said that he did not recommend the use of barbiturates in pneumonia because no other drugs were so likely to cause bronchopneumonia, and in addition they were not sufficiently powerful. For post-critical delirium he preferred hot packs and tepid sponges to drugs, which should only be used after physical measures had failed. He thought large doses of bromide were useful but would hesitate to use as much as 1 drachm hourly. However, the proof of the pudding was in the eating. He recommended that when barbiturates were required, well-known ones like veronal and Medinal should be prescribed. He agreed that a second dose of paraldehyde was not as effective as the first. Barbiturates often caused excitement. Morphia often relieved pain without inducing sleep, and sometimes caused excitement. The effects of the barbiturates were cumulative; a patient who had received 1 grain of luminal daily for one year had developed toxic jaundice. Veronal in usual doses took 2–3 days to be excreted. The barbiturates and morphia should not be used for the insomnia of pregnancy, since the effect of the hypnotic on the child had to be considered. It was best to adopt simple physical measures, and if hypnotics were required aspirin or alcohol should be administered.

Prof. W. A. OSBORNE (Melbourne) read a paper on a

Vasoconstrictor Principle in the Skin of the Frog (*Hyla Aurea*)

He said that when experimenting on a frog he happened to rub his eyes which immediately became very painful but not blood-shot. This chance observation led him to further experiments. He made an extract of the frog's skin which on injection constricted the peripheral arterioles, completely closing them. The heart stopped beating as a result of coronary spasm, and the blood pressure remained high. The experiment had been repeated and the result confirmed. He knew of no other drug which produced complete obliterative spasm of the arterioles. The effect of the extract was only slightly reduced by boiling. He suggested that this curious principle in the skin of the frog might some day find a clinical application.

Mr. JOHN TAIT (Melbourne) opened a discussion on

Urinary Antiseptics

He said that antiseptic drug treatment of infections of the pelvis of the kidney must be ineffective because the pelvis emptied so frequently. In determining what could be expected from drug treatment the basal pathology of the various urinary tract infections had to be considered. A great many infections were blood-borne. The gall-bladder had been the origin of the infection in one of his patients who had been cured of a chronic pyelitis by cholecystectomy. The majority of the infecting organisms came from the bowel. If they were not destroyed by the normal immunity mechanism they could cause urinary tract infections. Mental exhaustion was the main cause of impairment of the normal mechanism. Chronic pyelitis was a disease of professional people. A small number of cases of chronic pyelitis gave a history of bowel infections. There was great difficulty in curing these infections by drugs. Hexamine (urotropine) was the most useful. He quoted a case of chronic pyelitis who had been kept comfortable with hexamine for years. Hexamine should be given between meals when the gastric acidity was at its lowest. Hexyl resorcinol (Caprokol) was not more efficacious than hexamine. Alkalising the urine in cases of *B. coli* infections was often very effective. Some other *B. coli* infections were best treated by rendering the urine acid by a ketogenic diet and the administration of acid. In many cases a weekly alternation of the reaction of the urine was of great value.

Of the antiseptic dyes Pyridium and Neotropin were good and very penetrating. Flavine and mercurochrome applied locally were often effective in concentrations of 1 in 4000, but much higher ones could be used if the state of the kidney pelvis permitted. Intravenously these two drugs were not efficacious. A combination of methylene-blue and sandalwood oil was a good sedative antiseptic. It was desirable in addition to drug treatment to control the source of the infection, to build up the immunity response, and to promote a free flow of urine.

Mr. H. MORTENSEN (Melbourne) said the antiseptic properties of drugs depended on the form in which they were excreted in the urine. Some antiseptic drugs caused a beneficial effect by their diuretic action. Secondary infection was frequently the first sign of some lesion, such as calculus, of the urinary tract. The three types of urinary antiseptics were: those derived from plants, for example, buchu which probably acted by its diuretic effect; those having a direct antiseptic action; and those which altered the reaction of the urine. Hexamine and acriflavine were probably the best. Hexamine intravenously should be more often employed as a prophylactic after operative manipulation. Hexamine in a highly acid urine was most efficacious against *B. coli*. Ammonium chloride was better for acidifying the urine than was acid sodium phosphate, but it was irritating to the alimentary canal and might produce acidosis. N.A.B. was effective against coccal infections. When it was necessary to alkalise the urine, large doses of potass. bicarb. or potass. citrate should be used. Beta-hydroxybutyric acid was the factor which inhibited *B. coli* in patients taking a ketogenic diet. A reaction of pH 5·2 to 4·6 was required in vitro. Twelve grammes of mandelic acid and 8 grammes of ammonium chloride daily were effective.

Dr. MAXWELL said that hexamine for its antiseptic action required a concentration of pH 5 and needed to be in contact with *B. coli* for six hours to destroy it. The pH was difficult to obtain clinically and it was almost impossible in cases of acute cystitis to keep the urine in the bladder for several hours. Similarly in pyelitis, contact with the antiseptic was not sufficiently long. Hexamine in cases of retained catheter did not prevent infection.

Sir WILLIAM WILLCOX agreed with the remarks of Mr. Tait and Mr. Mortensen. Changes of antiseptics were beneficial. One drachm of potassium citrate 3–4 times daily for 3–4 days at intervals of 3–4 days was useful. Metromene (methylene-blue and hexamine) was used a lot in England apparently with good results. An autogenous vaccine was of value in treatment and also vitamins A and D in building up immunity. Hexamine salicylate (Cylotropin) intravenously was effective in acute toxæmic conditions arising from the urinary tract.

Mr. MORTENSEN, replying to Dr. Maxwell, said he preferred catheterising a patient 2–3 times daily to having an indwelling catheter. He agreed with Sir William concerning the beneficial effects of cylotropin.

MALARIA IN CEYLON

MUCH that has been written about the epidemic of malaria in Ceylon is inaccurate or misleading; but with the publication of reports[1] by Colonel C. A. Gill and Dr. Rupert Briercliffe we now have an official account of it. Dr. Briercliffe is director of medical and sanitary services in the island; Colonel Gill, formerly chief malaria medical officer and director of public health, Punjab, was appointed as expert adviser on malaria by the Ceylon Government during the epidemic. The former states that his report is concerned chiefly with facts and figures, while the latter reviews the facts and defines the policy that should be followed by the Government of Ceylon in the future. From these reports we learn that the epidemic is the greatest pestilence in the recorded history of the island. In seven months it destroyed 80,000 lives, and indirectly it caused incalculable misery and distress; for it interrupted trade and business, paralysed village life, and led to an almost complete cessation of agricultural operations for a long period with consequent dire privation and starvation.

Although there had been previous epidemics on a large scale, and although two-thirds of the island—the north, east, and south-east parts of Ceylon—once densely populated, are now so malarial that they contain only about 4 per cent. of the population, this outburst came as a bolt from the blue. In the last week of October and first week of November, it appeared as an "explosive outbreak" in an area of about 5800 square miles. The peak of the epidemic as judged by sickness was in the midde of December, 1934, and as judged by mortality in the middle of January, 1935; from then it slowly declined except for a small rise in May and June At the height of the epidemic there were 60,000 attendances a day at the government institutions in the affected area, and by the end of April 1½ million cases. Curiously enough this epidemic area was situated between the intensely malarial area in the north, and an area in the south-west, where there is little malaria normally, and which even during this epidemic was little affected.

Part of Colonel Gill's report is occupied by a discussion of the cause of the epidemic. He considers an epidemic "was due, if not overdue." He acknowledges very properly the valuable work during the past 12 years by Mr. H. F. Carter, medical entomologist, who had incriminated *Anopheles culicifacies* as the chief, if not the only important carrier of malaria in Ceylon, and who provided him with full information on the bionomics of the 18 species of anopheles in the island. *Culicifacies* breeds in rock and sandy pools in the beds of rivers, but it is also found in many other situations, like wells, borrow pits, quarries, drains, pools, and sheets of water formed during the rains. In most years the rains flush the rivers and sweep away the larvæ, but during droughts the larvæ are undisturbed and hatch out in enormous numbers; hence the association of malaria with rivers in Ceylon which has long been recognised. Colonel Gill sounds a warning that mosquito control in the river-beds alone is not likely to be successful.

The permanently malarial north, east, and south-east parts of Ceylon receive rain from the north-east monsoon in October, November, and December; in these there is a single malaria wave with a broad peak in January, February, and March, and a slow descent to its minimum in June. In most of this area the rainfall is below 40 in. per annum and it is called the "dry zone." The remainder of Ceylon receives an average annual rainfall of more than 100 in., in places 200 in. In this "wet zone" are areas almost free from malaria; and others which, subject to moderate malaria, suffer most from the great epidemics. In the wet zone, a malaria wave appears twice a year; in January after the north-east monsoon; and in June, July, and August, after the south-west monsoon. Yet although the wet zone is subjected to two malaria waves in the year, the spleen-rate there is from 0–10 per cent. compared with 40–60 per cent. and over in the dry zone, and 10–40 per cent. in the intermediate area which suffered most during the recent epidemic. In all parts of Ceylon, except the central mountain region, temperature and humidity even during prolonged droughts remain favourable to the transmission of malaria by the insect carrier.

Colonel Gill discusses the distribution of the malaria and the epidemiology; but despite certain correlations between rainfall and malaria, and full entomological data, "the entomological theory does not appear competent to explain the whole phenomenon presented by the epidemic and the intriguing paradox therefore remains that malaria epidemics in tropical Ceylon are determined by drought, whilst in sub-tropical India they follow excessive rainfall." An attempt is made to explain the paradox, by suggesting a periodicity of the parasite, "possibly the quality variously referred to as 'the unknown influence' the 'X factor' of Pettenkofer, 'the epidemic potential' and 'the general determining cause' of modern epidemiologists. Whatever may be its nature, the predominant attribute attaching to periodicity is the variable amptitude of its range." If other conditions are not favourable even this universal "influence" cannot produce an epidemic. And so in spite of a highly congested population containing a high percentage of susceptible children, in spite of the presence of drought, in spite of special hardships from economic conditions, and in spite of the presence of river-beds, the "influence" had little effect in the south-west area of the island, where the carrier insect, although present was not widely prevalent. Nor had the "influence" much effect on the permanently higher malarial area.

SYMPTOMS AND TREATMENT

On the clinical side the predominating parasite is reported as *Plasmodium vivax;* but there is some doubt whether the microscopic work in many hospitals was accurate. A special study of 647 cases showed that besides the common type of fever, there were cerebral cases, algid cases, diarrhœal and dysenteric types, œdematous types, and malaria complicating pregnancy often with disastrous results. In the treatment of malaria during pregnancy Dr. G. A. W. Wickramasuriya considered that "far from being an oxytocic, quinine administered in effective therapeutic doses, by rapidly controlling the malarial infection and the high temperature, prevents premature interruptions of pregnancy and intra-uterine fœtal death," and his views have been generally confirmed by other medical officers. The association of ankylostomiasis, or malnutrition, with malaria was regarded as the cause of the partial or generalised œdema which occurred in a large number of cases in the later stages of the epidemic, chiefly among children,

Atebrin and Atebrin mussonate were used in

[1] Report by Director of Medical and Sanitary Services (sessional paper XXII.), with supplement containing maps and charts; and Report by Colonel Gill (sessional paper XXIII.). Published in September, 1935, and obtainable from the Government Record Office, Colombo, at Rs.4.50 and Rs.3.0 respectively.

hospitals, but were not considered suitable for use at dispensaries and in the field owing to their toxic effects. Comparing atebrin and quinine an appendix to Dr. Briercliffe's report states:—

"*Deaths.*—Among 681 patients treated with atebrin mussonate 17 or 2·5 per cent. died and among 424 treated with quinine 6 or 1·4 per cent. died. Four of the 17 deaths following atebrin mussonate were attributed to the toxic effect of the drug. If these four cases are excluded, the natural death-rate among the atebrin treated cases would have been 1·9 per cent., which is not significantly greater than the death-rate for the quinine treated series."

Discussing the toxic effects and the sudden deaths after atebrin injections, the appendix states that—

"among adults, pregnant women have been found particularly liable to collapse after injections. Convulsions due to malaria were of frequent occurrence among children in the early stages of the epidemic. Convulsions occurring a few minutes or hours after an atebrin injection and attributed by the medical officer concerned to the atebrin injection have occurred in both children and adults. They were always fatal."

PROPOSALS FOR THE FUTURE

In Part II. of his report, on the Control of Malaria in Ceylon, Colonel Gill discusses the scientific problem under the headings, the mosquito factor, the parasite factor, and the human factor, and summarises this by saying endemic malaria in Ceylon presents no novel or remarkable features. Although these epidemics have hitherto been regarded as uncontrollable, there is now reason to believe that their emergence can be prevented if measures are taken that will reduce the spleen-rate and the anopheline-rate (*A. culicifacies*) to the level of these factors in the south-west healthy area. This will take time, but can be accomplished if medical science provides the technical knowledge, Government the machinery, and public opinion the motive power. Government having decided that the population is sufficiently advanced politically to control its own internal administration, the success of the scheme will depend on the actual coöperation of the people. Colonel Gill reminds them that so far only a few antimalarial schemes had been begun in Ceylon, and had achieved only a certain measure of success—not from any fault in the schemes, but from lack of popular interest resulting in a lack of funds to complete or maintain them. The recent epidemic, however, has produced a profound change in public opinion.

No attempt is made to frame an antimalarial scheme for adoption in each individual area. Colonel Gill recommends generous provision of hospital facilities and that apothecaries and dispensers in the Government and estate hospitals and dispensaries be replaced by registered medical practitioners provided with microscopes, so that diagnosis and treatment may be more accurate; this is to control the parasite factor in man. Malaria control schemes should be undertaken in urban, rural, and estate areas; by land drainage, irrigation and development schemes, and river training operations. He deprecates colonisation schemes which involve the introduction of non-immune settlers into hyperendemic areas; and he considers antimalarial measures in such areas will not be effective unless accompanied by measures designed to promote rural betterment by increasing the food-supply and relieving economic distress.

The recommendations include establishment of a Sanitary Works Board, with the Minister of Local Government as president, and an equal number of official and unofficial members. It is also advised that an Anti-Mosquito Ordinance be passed. A proposal had been made to erect a Malaria Research Institute in commemoration of the Jubilee; Colonel Gill recommends that a malaria department be accommodated in a wing of a main institute. He states his proposals will cost money; "good health, including freedom from malaria, is a purchasable commodity, but it is doubtful whether it is worth having as a free gift." Financially stricken as the island has been by the world depression and the great epidemic of malaria, the Government and people of Ceylon have now the anxious task of deciding how the maximum benefit is to be obtained from the minimum expenditure; which of Colonel Gill's recommendations are to be carried out now and which postponed; for Colonel Gill says of this "balanced scheme" that "many parts indeed can be postponed or omitted without destroying its general structure."

THE CONGRESS OF DERMATOLOGY

(FROM OUR BUDAPEST CORRESPONDENT)

THE Ninth International Congress of Dermatology and Syphilology has been memorable both for its unprecedented size and for its scope. Dermatology, it was apparent, ranges widely through the whole field of medicine; and without attempting to summarise the hundreds of addresses delivered I will endeavour to convey something of the catholic outlook they revealed.

VENEREAL DISEASES

During the first few days venereal disease was considered from the international standpoint. It was accepted as a fact that syphilis and gonorrhœa could be made extinct throughout the world within a single year if all who suffer from them would have themselves fully treated. Starting from this principle the Congress proposed the application of legal penalties and the State control of treatment, together with the regulation of prostitution. From this it passed on to discuss some of the social questions arising in the practice of dermatology and venereology, including out-patient dispensaries, sick clubs, beauty specialists, barbers, masseurs, and quacks. Prof. KERL (Vienna), in an address lasting several hours, pointed out that while specialists in dermatology and venereal diseases keep strictly to their own territory, practitioners in adjacent fields press ever harder on their confines; indeed, it is often suggested that the treatment of syphilis is rather the business of the internist and the neurologist than of the venereologist! Kerl's idea is that the latter must gain exact knowledge of the borderland of his subject—even if it means adding a couple of years to his training—and that when he has such knowledge even neurosyphilitic affections should come within his province.

ALMQUIST (Stockholm) early created a sensation by proposing that the present division of syphilis into three stages should be abandoned; by means of many histological preparations he demonstrated that this infection, at all stages and in all places, will always produce what is essentially the same lesion. This view was accepted by many other pathologists present but on the whole was considered unproven. GRUNBERG, who has been studying the nature of the Wassermann reaction, reported that he has obtained positive tests from healthy animals treated with "spirochæte lipoids," whereas previous treatment with non-specific "organ lipoids" did not yield the same results. SCHERESCHEVSKY (Paris) made known his successes in the treatment of syphilis

in animals by means of a quinine preparation of his own, but it was felt that further evidence of its efficacy was required. Also in the discussions on syphilis an interesting dispute arose between ARZT and KERL, both leading clinicians of Vienna, about the importance to be attached to early changes in the cerebro-spinal fluid. Arzt looks on these changes as an indication for treatment with malaria, whereas Kerl upholds the conventional view that they are mostly transitory. PINARD (Paris) took the view that fever therapy is desirable in syphilis (1) if the blood-serum is obstinately positive, or (2) if there is a positive Wassermann reaction of the cerebro-spinal fluid or other evidence of neurosyphilis. If the blood Wassermann cannot be made negative he prefers sulphur; in neurosyphilis and G.P.I. he uses malaria, or sulphur if it fails. LUDWIG WINKLER (Oradea, Rumania) drew attention to his priority as advocate of sulphur therapy in neurosyphilis, and spoke of its value in cardiovascular and arthritic syphilis as well. He also referred to the importance of estimating the erythrocyte sedimentation-rate as a control of cure of syphilitic infection. HILGERMAN (Landsberg) and SPITZER (Vienna) gave an account of their method of inoculation with a spirochæte vaccine, which they believe makes the organisms of syphilis accessible to chemotherapy.

The five largest American clinics reported their experience of cardiovascular syphilis; it appeared that in 6253 cases of syphilis—treated early, late, satisfactorily, unsatisfactorily, or not at all—the percentage of cardiovascular complications was 9·9; while in the smaller group, comprising only those which had not been treated early enough, it was 23 per cent. The Americans are the champions of uninterrupted treatment at all stages of syphilis.

Gonorrhœa did not receive as much attention as sometimes. Austrian and German members of the Congress expressed doubt about the value of the serological reaction, which they considered very problematical; VERESS (Cluj) thought it unduly optimistic to use this reaction as a criterion for treatment. As regards actual remedies no advance worth mentioning seems to have been made during the past few years. The horse serum injections proposed by Szilvassy have proved useless in GUSZMANN'S hands, and all the speakers seemed to agree that vaccines are valueless in the acute stage, while their action on complications is probably not specific. Of new preparations methylene-blue and acridine dyes seem to be the only ones which represent an improvement. Goldberger's abortive cure with Trypaflavine was received very dubiously, and some rejected it altogether.

SKIN DISEASE AND THE BODY AS A WHOLE

With the object of increasing the international solidarity of dermatologists a number of committees were appointed to go into such problems as cutaneous tuberculosis, industrial and other environmental affections of the skin, and the classification and nomenclature of skin disease. This last committee, under the leadership of Howard Fox of New York, is faced with a difficult task of reconciling many different attitudes; it has to bear in mind the different effects of identical causes and the identical effects of different causes, the individuality of the patient, the transitory nature of symptoms, the varying virulence of maladies, and the accumulation of diverse processes. In the present state of knowledge no system of eternal validity can be laid down, but one can imagine a working classification which would adapt itself to the advance of knowledge.

DARIER (Paris), MAYR (Munster), and STEIN (Vienna) spoke of the importance of the skin as an organ, especially in relation to diuresis and dyshidrosis. Too much attention, they feel, has been given to the heat-regulating function of the skin and not enough to the excretory. It is significant that in pemphigus, for example, the quantity of urine passed decreases to a minimum, simply because of the excessive external loss of fluid. With the fluid goes sodium chloride, and the chloride excretion in the urine is reduced—an effect which may easily give rise to a mistaken impression that renal function is impaired. Means of testing the normality or abnormality of the skin as an organ are provided by the injection of such drugs as atropine and pilocarpine, which respectively promote and decrease sweating but have no influence on a sick skin. Caffeine doubles perspiration under normal circumstances but again may have no action when cutaneous function is already damaged. Such tests can be performed with delicate and complicated but reliable instruments. Stein also spoke of the elimination of toxins through the skin: the old exponents of humoral pathology used to maintain that all skin diseases were due to poisonous substances inside the body, and though this is an exaggeration many such diseases are really connected with puberty, pregnancy, and the menopause, and presumably with poisonous substances produced in these states. Juvenile acne, for instance, begins in puberty and is seldom seen after 40 years of age, and Stein has made the interesting observation that it occurs (almost without exception) in children who are precociously mature, and never, on the other hand, in eunuchs. Is it any wonder that another lecturer should urge the necessity for exact endocrinological tests in cases of obstinate skin disease?

Much was said about the action of vitamins on the skin, and several speakers assumed that they have a preventive or curative action; a Hague professor, for example, reported good results from the use of vitamin-rich raw foods in conditions such as psoriasis and eczema. The importance of dietetic treatment in skin diseases where the patient suffers also from digestive disorders was fully recognised. Due consideration again was given to the rôle of focal infections.

LEVADITI (Paris), NICOLAU (Bucharest), and others introduced the important subject of the filtrable viruses, and spoke of the proof that lymphogranuloma inguinale is due to a virus and can be recognised with the Frey antigen. URBACH and WOLFRAM reported that pemphigus vulgaris and dermatitis herpetiformis are likewise due to a virus, while NEUBER (Debreçen) stated that rhinoscleroma is caused by a capsulated bacillus—findings which will be of great interest provided that they can be corroborated. MANNSHEIMER (Essen) brought forward statistics supporting the Russian view that lupus in its ætiology has nothing to do with pulmonary tuberculosis. He denies that phthisical patients are particularly liable to contract lupus; indeed, he finds that their illness tends more towards recovery when they do so. Also speaking on lupus, AITKEN (Edinburgh) said that among 270–280 cases he had found that about half followed tuberculous infection of glands of the neck. It was very important, he said, that practitioners should recognise the great value of ultra-violet irradiation for tuberculous adenitis.

Elsewhere the Congress provided evidence of a reaction against methods of irradiation in dermatology; it was evidently felt that these have been

carried to excess. FRANCIS POLLER has not found short and ultra-short wave therapy particularly valuable; physicians from the United States quoted cases which suggest that diathermy is just as efficacious.

To sum up, although this Ninth Congress brought no great new discovery it has cleared up many problems of diagnosis and treatment and brought out new principles and objectives. Apart from skin diseases caused by external infections, it seems that the time is not far distant when the use of ointments in dermatology will be almost extinct. What has become chiefly important, for efficient diagnosis and for efficient treatment, is a knowledge not of the changes discovered but of their underlying causes.

LONDON WATER

SOME PRESENT-DAY PROBLEMS

Colonel Harold's first report [1] as Director of Water Examination to the Metropolitan Water Board is full of interest, for, as he says, he came from the comparative quiet of a peace-time army into the heart of the Board's operations at a time of national emergency arising from two years' drought when it became necessary to consider matters of high policy. London was, however, saved from anything more than anxiety and inconvenience owing to the huge storage systems built up in accordance with the wise policy of his predecessor; and the danger being over Colonel Harold feels free to poke a little fun at the Londoner who talks about a condition of drought when he has sufficient water for all purposes, including a daily long bath. He compares it with the water shortage of an Eastern war-time cantonment, where the daily issue resolved itself into a petrol drum of water, derived from brackish underground sources, receiving the unpurified road washings of an unpaved Eastern town. But the shortage of water in London, such as it was, led to the relaxation of a provision in the Thames Conservancy Act of 1932 that every day 170 million gallons of water must pass over Teddington Weir. This eased the situation, but the reduced flow of the river must have reacted on the condition of the tidal reaches if only to a small extent. At Barking sewage carried upstream by the tide gave rise to many complaints from those using piers and boats. The total volume of water in the Thames between Barking Creek and Teddington Weir amounts at low tide only to some 8000 million gallons and the average content is 15,700 gallons, while the incoming water each tide is about double the low tide figure. The minimum statutory flow of fresh water over Teddington Weir of 170 million gallons per day obviously bears to the average volume mentioned the ratio of 170 to 15,700 or 1 to 93. A reduction of 30 million gallons per day in the statutory flow would change this ratio of fresh to tidal water to 1 to 113, a change which could have little adverse effect on the Pool of London. Also it should not be overlooked that some of the extra water abstracted from the river must ultimately reach the sewers and dilute the effluent which is passed into the Thames.

TASTE TROUBLES

Apart from this special source of complaint London consumers found little to grumble about last year. The complaints reaching the offices of the Board numbered no more than one three-thousandth of a per cent. of population served. Only half of these were complaints about taste, and again only half were accepted as valid after investigation. Strictly speaking the responsibility at law of the Water Board terminates at its mains—no small liability in itself for there are 7760 miles of them. But in practice all complaints are investigated on account of the light which they may throw on adventitious pollution. During the year definite pollution was twice traced to cross connexions of piping in important buildings. Generally speaking, Colonel Harold says, most of the complaints arise from local causes beyond the mains. The tank room offers great attractions as a playground on wet days and the household storage system is a fertile source of pollution. In one case, where a complaint was made that tap water was unfit for dispensing, inquiry revealed an aggregation of lead, shavings, and oakum left in the pipe by the plumber. Evidently every consumer should demand of his landlord a tap direct off the main for drinking purposes. In periods of high atmospheric temperature complaints of a disinfectant taste were sometimes received and later of an earthy taste at the time when a profuse growth of algæ dies on the filter beds. But, all in all, London water is no mean beverage, and its palatability may be largely attributed to its moderate hardness. During the year a committee of residents in West Wickham, after wide investigation, concluded that whilst it would be possible for their water to be softened, that would on balance be no advantage to the community.

OZONE OR CHLORINE

But the scientific interest of the present report is greatest in the big issue which will soon have to be decided as to the choice of the final disinfecting agent in water purification. The drought brought to light defects in the filtration system as a result of which chlorine and ammonia points have been installed in many places as an additional safeguard. The continuous flow of water through storage systems results in an enormous reduction of the bacterial and organic content of the water. Next comes an efficient filter barrier, and finally a chemical process which needs time for effective action either in contact tanks or in the mains before the draw off. The aim of successful water practice is to supply a worked-out weathered water with a composition like the unpolluted natural water, and in contradistinction to campaigning measures chemicals are used only as a finishing process and as a corrective to counter an emergency. The importance of such an invulnerable barrier is illustrated by an incident at Milwaukee in 1916, when the chlorine was accidentally shut off for several hours and the water was badly polluted for one day. The result of this was 25,000 to 100,000 cases of diarrhœa followed by about 500 cases of typhoid fever with 60 deaths. The choice of final process for London water rests between ozone and chlorine—or rather combinations of chlorine and ammonia, for free chlorine is no longer used. Ozone imparts an excellent finish to water and removes the majority of disagreeable tastes. When it has done its work it leaves nothing behind but oxygen. A water cannot be overdosed with ozone, since the gas is ultimately dissipated. Ozone is increasingly popular in France and has been tried out at one of the Board's works at Barn Elms. But whereas chloramine continues to function as an efficient germicide under the worst possible conditions, ozone requires a filtrate of fairly uniform quality. On the other hand, with ozone the contact period

[1] Metropolitan Water Board. 29th Annual Report by Lt.-Col. C. H. H. Harold, O.B.E., M.D., D.P.H. London: P. S. King and Son. 10*s*. 6*d*.

need be only a few minutes, in contrast with the one and a half to two hours contact required in the tank after a standard dose of ammonia and chlorine. But then again the longer contact period may provide, and not infrequently does, a completely sterile water. There is a further suggestion, which requires careful examination, that ozonised water after exhaustion of the ozone becomes more susceptible to bacterial growth. Colonel Harold sums up the situation thus. From the consumer's point of view, ozone presents the greater attraction, and if properly applied is an effective sterilant, provided that at all times an absence of breaches in the filter barrier can be guaranteed. On the other hand, chloramine offers an all-round security under every possible condition and is the safety-first of waterworks practice.

AMERICAN PUBLIC HEALTH ASSOCIATION

(FROM AN OCCASIONAL CORRESPONDENT)

MORE than two thousand fellows, members, and guests of this association were registered at the annual meeting held at Milwaukee, Wisconsin, from Oct. 7th to 10th. This is the largest attendance recorded since a registration fee was inaugurated.

Poliomyelitis

The summer epidemic of poliomyelitis and the resulting popular excitement had their effect upon the programme. The governing council voted the creation of a special committee to confer with the U.S. public health service and to announce to the press and to the public whenever it may be necessary such dicta regarding the administrative control of poliomyelitis as may be calculated to allay panic and quiet or prevent unreasonable agitation. As to whether there is any knowledge to disseminate a difference of opinion was expressed. The epidemiologists state that we know at least as much about poliomyelitis as about scarlet fever. An experienced health officer retorts by saying that if every health officer died to-morrow there would be neither more nor less poliomyelitis as a result. Dr. James P. Leake, senior surgeon U.S. public health service, made an effective plea for the reporting of paralysis whenever it occurs. In North Carolina, where this year's epidemic began (in April), 90 per cent. of the cases reported were paralytic. This is a quite unusually high proportion. In New York, where there was an excess incidence though hardly an epidemic, 55 per cent. of the cases were paralytic.

This summer gave occasion for the trial on a fairly large scale of the vaccines prepared by Dr. Kolmer and Dr. Brodie. Dr. Kolmer's vaccine is a living attenuated virus. It was given to some 12,000 persons, nine of whom subsequently developed poliomyelitis, eight of them with paralysis. Dr. Kolmer is convinced that in each case the disease was in the stage of incubation and developed because the vaccine was given too late to produce immunity. His critics, however, are not satisfied that there was no causal relationship between vaccination and pathogenesis. They refuse to regard the living vaccine as safe. Dr. Brodie's vaccine prepared in the laboratories of the New York City department of health is a killed vaccine. It has been given to 8000 persons and one only has developed poliomyelitis. The vaccine given in this one case had received three times the treatment needed to make it non-infectious to monkeys and had in addition been shipped from New York to the west coast. The disease developed well within the period of incubation from the date of known exposure. Critics accept the safety of Dr. Brodie's vaccine, but consider further experience necessary to prove its efficacy. So indeed does Dr. Brodie, who is refusing to supply his vaccine except for properly controlled experimentation.

Whooping-cough

Dr. Louis W. Sauer reported on results obtained with his pertussis vaccine which is now being used extensively by physicians in this country. Dr. Sauer sees no evidence that pertussis vaccine has therapeutic value. However, with vaccine prepared and administered in the Evanston Hospital he had had complete success in prophylaxis. With "authorised" commercial vaccine the success has been less complete as is shown in the following Table.

Three-year Report on Pertussis Immunisation

Authorised commercial vaccine (Sauer) 8 c.cm.	Injected.	Exposed		Failures.
		family.	outside.	
Private	475	30	28	5
Health Department .	612	13	50	4
Two orphanages ..	242	23	—	1
Cradle (illegit. infants)	187	—	—	—
—	1516	144		10

Unsolicited reports have been received from 58 physicians in 22 different States, the total figures given being 6455 patients injected, 476 exposed, and 81 failures. The high proportion of failures to exposures and the low proportion of exposures to injected are explained on the ground that many of these physicians had no means of knowing of exposures except in such cases as subsequently developed the disease.

Every attempt has been made to ensure that the "authorised" commercial vaccine shall be prepared by exactly the same methods as those used in Dr. Sauer's laboratory in Evanston. Three possible causes of failure were discussed: (1) The warming of the vaccine. At the Evanston Hospital this is not allowed to take place at any time between preparation and administration. In distribution of commercial vaccine over the country uninterrupted refrigeration has not been practicable. (2) Age of administration. Seven out of ten failures occurred in children over 3 years of age. As a result of this observation Dr. Sauer is now recommending that children over 3 years receive a total dose of not less than 10 c.cm. (3) Use of recently isolated strains. In preparation of commercial vaccines there may be difficulty in obtaining recently isolated strains. Microphotographs were displayed showing the marked changes in morphology undergone by *B. pertussis* in culture.

Mental Hygiene

Dr. Elizabeth I. Adamson, of the department of psychiatry, Columbia University, made a strong point for the inclusion of this subject in official public health programmes when she pointed out that psychogenic illness, like tuberculosis, is mainly acquired in childhood and is a family disease communicated by prolonged and repeated exposure. Prof. Grant Fleming, of McGill University, while

accepting the wisdom of proceeding slowly in making additions to the official health programme, encouraged voluntary organisations to blaze the trail and described how existing institutions in Canada might be used as centres around which provincial mental hygiene organisations can be created.

Lay Administrators

In the report of the committee on professional education, the following passages gave rise to much comment and some criticism:

> In practice in the United States there have been in the past many non-medical health officers, some of whom have served with such distinction as to demonstrate conclusively that a suitably educated individual, not a doctor of medicine, can administer a health department efficiently and well.
>
> While there are many positions in the field of public health which can well or best be filled by workers well educated in the theory and practice of public health but not possessing a medical degree, the position of administrative health officer, whether of state, city or county, demands in general the possession of medical as well as public health training. We do not recommend the discontinuance of courses in public health for the education of non-medical persons, but the committee believes that such persons should be informed before entering on a course that their probable field of activity will be curtailed by the absence of a medical degree, and that their chances of succeeding to an important administrative position in the field of public health are not bright. Young men and women intending to enter the field of administrative public health should be advised to secure a medical degree, specialising as much as possible during the medical course in the various fields of preventive medicine, and adding the special course in public health at the end of the usual hospital interneship. It is from such a group that most may be expected in the coming years.

The remarkable personality and teaching ability of the late Prof. Sedgwick is responsible for a group of highly successful lay public health administrators. It is still uncertain and perhaps will for some years remain uncertain to what extent the non-medical public health officer can win a place for himself in public health administration in this country. Should he choose to specialise in social welfare as well as in public health there is a distinct possibility that his prospects may be brighter than this report would indicate.

The new president-elect is Dr. Thomas Parran, Jun., health commissioner of New York State, the president being Dr. Walter H. Brown, professor of hygiene at Stanford University. New Orleans was selected as the convention city for 1936.

MEDICINE AND THE LAW

Damages for Shortened Life

IN Rose *v.* Ford, which came before the Court of Appeal last month, further light was thrown on the change in the law whereby a right to damages for negligence can now survive for the benefit of a dead person's estate. This class of case is of interest as showing the attitude of the courts to the assessment of damages for shortened expectation of life and similar questions. At Birmingham Assizes Mr. Justice Travers Humphreys had to consider the case of a girl who, as the result of a motorist's negligence, was injured fatally. Soon after the accident her leg was amputated; two days after the amputation she died. The judge had awarded to her representatives £500 for her pain and suffering and for the loss of the limb, and £500 for the more remote damage she would have suffered in going through life as a woman with only one leg. The Court of Appeal cut down the first £500 to £20, and the second £500 to 40*s*. The girl had lost her leg only two days before she died and the judges held that the nominal sum of 40*s*. would be enough for those 48 hours. The judge at assizes was apparently wrong in thinking that the girl's estate could recover damages on the basis of a normal expectancy of life after the amputation.

"Punch-drunk" Boxer's Plea of Insanity

In an application to the Court of Criminal Appeal (in R. *v.* Bousquet, Oct. 14th) Sir Henry Curtis Bennett, K.C., urged that his client, a professional boxer, had been insane at the time of the alleged murder owing to his being "punch-drunk"—i.e., mentally affected by the blows and bruises he had received in the course of his career as a heavy-weight fighter. A witness at the trial had said that a "punch-drunk" boxer would not know what he was about. It was suggested that Bousquet had not been normal since last February, and that his condition had been getting steadily worse. His letters and statements were damaging evidence of guilty intent; the defence contended that they were delusions. The Lord Chief Justice delivered the judgment of the court which rejected the application. Dr. Grierson, a medical officer of long experience in the prison service, had said that there was no evidence of insanity. Lord Hewart enumerated the three points which the accused had to establish: (1) that he suffered from a disease of the mind; (2) that because of such disease he suffered from a defect of reason; and (3) that, in killing his victim, he did not know the nature and quality of his act—as if, for instance, he thought he was merely peeling an apple when he was actually cutting someone's throat. The defence had failed to establish these points and the failure was final.

The Use of Films as Criminal Records

Two days after the decision in Hauptmann's case at Trenton in New Jersey (set out in this column last week), an Inter-State conference on crime prevention was held in the same building. It was specially concerned to remove obstacles due to the separate and independent jurisdictions of the several States of America. If a gunman commits a murder and can slip over the border into an adjoining State, he will probably escape the consequences of his crime. The conference decided that the States would make compacts with one another for the surrender of criminals, the summoning of witnesses, and the checking of prisoners released on parole; in effect, the State boundaries would cease to exist. The conference also recommended the adoption of universal finger-printing throughout all the States and the provision of facilities for interchange of criminal records. One other resolution reveals an interesting element of psychology. It advocated the trial and use of "sound moving pictures" in the identification of criminals. The New Jersey suggestion is that a film be taken of persons convicted of serious crimes. The man will be shown moving along a platform and standing against a chart of Bertillon measurements. At present detectives see him under these conditions on conviction, but a film record would refresh their memory in later years and might be exhibited in

public cinemas when the man, as sometimes happens, is "wanted" for another serious offence after his release from serving his sentence for an earlier crime.

Nor is this all. It is said to be the experience of the police that a criminal, when caught, will sometimes volunteer a frank confession to assist the cause of justice or to relieve his own conscience, yet will afterwards repudiate his confession or will falsely allege that it was extracted from him by "third-degree" methods. The New Jersey police have the idea of using the sound-recording film, along with the ordinary cinematograph film, to record the confession at the moment when the criminal is in the mood to tell his story. If the record can show him making his statement voluntarily, deliberately, and at his ease, if it can show the police giving him a proper caution and warning him that his statement may be used against him, and that he must expect no advantage from it, then it may some day be available to negative a sudden and unsupported allegation that the man was "beaten up" or unfairly forced to confess. It may be doubtful whether we shall adopt this idea in England, but the proposal is interesting. The recent Inter-State Conference at Trenton indicates that Americans are at last being stirred to some active step to put down crime. The proposed system of Inter-State compacts to avoid awkwardness on State boundaries will recall the compacts sometimes made in England between local authorities to avoid unfortunate incidents on their boundaries in connexion with motor-ambulances and traffic victims. In America the question of crime in relation to State boundaries could best be solved by Federal legislation. This, however, might require a new amendment of the United States Constitution, and at the present moment Federal intervention in State matters is far from popular.

MEDICAL USES OF RADIUM

THE research centres throughout the country to which radium has been lent by the Medical Research Council submit reports this year[1] showing good progress and evidence that much thought is being given to improvements in technique. We select from the reports some items of special interest.

Cancer of the Breast.—The surgical unit of St. Bartholomew's Hospital makes an interesting statement concerning the comparative results of surgical operation and radium implants in the treatment of breast cancer. Examination of the five-year survival rates obtained by very careful follow-up shows that the results for the two methods of treatment are not materially different, being in each case 40 per cent. Since the new form of treatment did not prove superior to the old, it was decided to attempt improvement by combining interstitial radium with surgery, the breast being first implanted with radium needles and subsequently excised. It is hoped that by this autumn a special histological study of 50 cases treated by this method will have been completed, and the next report will contain an account of these. Birmingham General Hospital, where many breast cases are treated radiologically, the Marie Curie Hospital and the Middlesex Hospital all mention the use of X ray therapy either to supplement or to replace radium, suggesting that all are finding here a satisfactory line of advance.

Cancer of the Uterine Cervix.—Figures are now available of over 1000 cases of cancer of the cervix treated more than five years ago, and some interesting comparisons are possible. Presumably in future years survival tables will be supplied such as have recently been recommended by the League of Nations Health Organisation as a result of the inquiry made by a committee of experts under the chairmanship of Prof. James Heyman.[2] Tables of this sort are now prepared by nearly all research centres.

Of all types of cancer treated by radium the results are most consistent in cancer of the cervix, and although certain figures are still outstanding there is a suggestion, in the tables for the last three years, of a general improvement.

Cancer of the Uterine Body.—Most centres mention that hysterectomy remains the method of choice for early cases. It seems possible, however, that in the future a combined treatment by radium and X ray may replace surgery except in very favourable cases.

Oral Cancer.—This section includes reports from two hospitals where one-gramme units are in operation. The Middlesex Hospital states, "The teleradium unit has continued to prove its usefulness. . . . Quite apart from the curative value, which cannot be assessed until after a period of years has elapsed, it is a method of therapy which is more convenient and associated with less danger to the staff than is the case when large moulded applicators are used." University College Hospital point out the difficulty of so arranging the ports of entry that an adequate tumour dose is obtained, and believe that the solution of the difficulty lies in the direction of increased radium skin distance with the corresponding increase of radium element. The survival rate of cases of cancer in the oral cavity treated more than three years ago tends to be disappointing.

Cancer of the Rectum.—An interesting description is given of the technique in use at St. Bartholomew's Hospital for cancer of the posterior wall. This consists of perirectal needles passed through the perineal skin, and an ingenious arrangement of intracavitary radium on a rubber plaque pulled up by means of a tube passed through the colostomy opening. It is generally believed that radiation gives negligible results in the treatment of rectal cancer, but although the percentage of survivals is low the figures show that it is possible to cure the condition even when radical operation cannot be performed.

Sarcoma.—One or two cases giving a favourable response to radiation therapy are quoted, but the difficulty of accurate diagnosis, and the poor results in the proved cases of sarcoma of bone, suggest that detailed analysis is necessary before any conclusions can be drawn as to the value of irradiating the various forms of tumour derived from the mesoblastic elements.

Biopsy.—Workers at the Bland Sutton institute of pathology at the Middlesex Hospital have been making routine confirmatory diagnoses of the presence of growth, with analysis of the type of growth present. In some of the cases the portion of tissue for section has been removed after electro-coagulation of the area, and such material is said to give reasonably good histological preparations. The advantages of this procedure include the following: (1) any possible risk of dissemination of the growth by the biopsy is minimised; (2) it is more likely that an adequate piece of tissue will be removed. Excellent micro-

[1] Medical Uses of Radium. Medical Research Council, Special Report Series No. 204. H.M. Stationery Office. 1935. Pp. 45. 1s.

[2] Report to the Council on the Work of the 22nd Session of the Health Committee, Geneva, Oct. 7th to 14th, 1935. London: Allen and Unwin Ltd. 9d.

photographs show tissues sectioned after electrocoagulation in carcinoma of the skin and carcinoma of the cervix.

In addition to the reports from the centres of treatment, notes of many important experimental findings are included.

PARIS

(FROM OUR OWN CORRESPONDENT)

REDUCTION OF MEDICAL FEES

NOT long ago I wrote about the gesture made by a French medical society, which decided to reduce medical fees by 10 per cent. as part of the national movement towards a lower cost of living. This move has not won all the support it perhaps deserved, and replies to a questionnaire by the Confédération des Syndicats Médicaux suggest that roughly 40 per cent. of the members are hostile to all reductions whatsoever. The remaining 60 per cent. favour some system of reducing charges, but do not agree about the form it should take. It is felt that if the 10 per cent. cut is applied to a 15-franc consultation in a surgery, the doctor will collect a rather ragged sum which includes odd centimes. This is only one of the many little difficulties which have cropped up during the discussions. But while the medical profession has been debating the matter in as academic a spirit as could be generated in a rather mundane atmosphere, the Minister of Public Health, Monsieur Lafont, has asked for tangible proof of the profession's willingness to fall into line. He has addressed a circular to the prefects throughout France requesting them promptly to summon the representatives of the local medical societies, and to learn what measures they propose to take to reduce medical charges. References to this action in the medical press suggest that behind the Minister's thirst for knowledge there may be an administrative rod in pickle.

FRENCH BREAD

The present wretched quality of French bread was again discussed at a meeting of the Academy of Medicine on Oct. 8th when the Bread Commission presented a report which was a model of plain speaking and an endorsement of the resolution recently adopted by the Pharmaceutical Society of Paris. The Commission drily pointed out that while the farmers are organised in one trade-union, the millers in another, and the bakers in a third, there is no such thing as a bread-eaters' trade-union. This is a great pity not only for the unorganised bread-eaters but also for the said farmers, millers, and bakers, who have long suffered from an unofficial strike of bread-eaters, carried on more or less unconsciously. In an attempt to mend matters the Confédération des Syndicats Médicaux has arranged with the Bakers' Union for the sale from Oct. 20th to Dec. 15th of "bon pain" made of exclusively French flour containing 11–12 per cent. of dry gluten. In each arrondissement of Paris one baker's shop has been selected for the sale of this bread.

FURTHER CRITICISM OF MEDICAL JOURNALS

A correspondent in *Concours Médical*, signing himself "Briau," addresses himself a little plaintively to the reform of medical journalism. The functions of an editor, he believes, are to offer authors the hospitality of their columns, to give readers information, valuable or otherwise, and to provide printers with a livelihood. All of which is most laudable. It is also unthinkable that medical periodicals should not exist. But the surplus of useless over useful articles can only be compared, he feels, with the surplus of failures over successes in human reproduction—a comparison which might be a little discouraging to medical authors, did he not also point out that both the fertilising spermatozoon and the fertile new idea would never have appeared if a clean sweep had been made of all germ cells and all ideas. One of "Briau's" complaints is that the interest attaching to medical articles is too fugitive and elliptical. Who wants to know that a louse may make a guinea-pig epileptic? It is a matter interesting only the guinea-pig and, to a less degree, the louse. He thinks the reader's task would be much facilitated if only the author would condescend to summarise the gist of his paper in a few lines. But a summary is apt to be desperately banal; the author prepares it only grudgingly, feeling that no summary can do justice to the wit and wisdom to be enjoyed by the conscientious end-to-end reader. The late Dr. Slosson once wrote that 90 per cent. of the manuscripts he had handled in twenty years as an editor would have been improved by cutting off the first page or paragraph. If manuscripts were thus to be handled in rotation by one member after another of the editorial staff of a journal, only the summary might be left, and readers like "Briau" might have their hopes realised and succeed in keeping abreast of the times.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

EDINBURGH UNIVERSITY

Field-Marshal Viscount Allenby was last week elected rector of Edinburgh University for three years, in succession to General Sir Ian Hamilton. The election was accompanied by the traditional fight in the Old Quadrangle. A feature of the election was the support given to Dr. Chalmers Watson by students who sympathise with his views on the reform of the medical curriculum. The voting was carried out on the proportional representation basis, and after the votes for the Marquis of Douglas and Clydesdale and Mr. C. M. Grieve had been distributed, the final count was: Lord Allenby, 1047; Dr. Chalmers Watson, 916.

At a recent meeting of the university court it was announced that the Rockefeller Foundation had made a grant of £1500 to the department of medical chemistry, to provide for the expenses of Prof. Barger's work in vitamin B_1, for a period of three years from October, 1935. Intimation was received of the resignation of Dr. A. E. Barclay, lecturer in radiology, and it was agreed to appoint Dr. Robert M'Whirter to the lectureship in his place.

THE VOLUNTARY HOSPITAL SYSTEM

The future of voluntary hospitals in Scotland was discussed last week at a meeting in Edinburgh of the Committee on Scottish Health Services. It was submitted by witnesses on behalf of the voluntary hospitals that their future depends on the attitude of the State and local authorities towards them during the next five years. Voluntary hospitals had approved the provisions of the Local Government Act, but its working had not been satisfactory. The local authorities had not proceeded on the principle of coöperation. It was urged that the voluntary hospitals should be officially recognised by the State as an essential factor in the health services, and that

a thoroughly representative organisation should be set up to bring them directly and officially into touch with the Department of Health for Scotland. The witnesses stated that the inadequacy of medical attention at home added greatly to their work, especially for children.

This whole subject bristles with difficulties. Local authorities are at present attempting to construct hospital services which will equal those provided by the voluntary hospitals. If the voluntary hospitals are able to maintain their present standard of efficiency, they are likely to remain the centres of the profession in Scotland. It is arguable that the State or local authority should see that the efficiency of the voluntary hospitals does not suffer from lack of funds. Any attempt, however, by the local authorities to control the management of the voluntary hospitals is bound to meet with strong resistance.

VIENNA

(FROM OUR OWN CORRESPONDENT)

FEWER MEDICAL GRADUATIONS

THE report of Vienna University for 1933–34 shows for the first time since the war a distinct and constant fall in the number of students qualifying for the M.D. In 1913–14 the number of female and male students promoted to that degree was 385. When peace returned there was a rush of students whose studies had been interrupted and the figure went up to 521 in 1920, and rose steadily to 743 in 1924–25. After this, for quite a while it remained fairly stationary at about 600. In 1932–33 it again reached 521, and in the following year 442. According to calculations the final figure for 1934–35 will not exceed 420. But already an increase in the number of medical students has been announced again this winter term, for over 1500 have applied for admission to the courses. This is somewhat unexpected, for the lowering of the practitioner's income and general standard of life is so vividly manifest that one would have thought young men would be very unwilling to take up this profession. The only explanation one can think of is that the outlook is just as bad in all the other "intellectual" occupations, and that many a youth, thinking that times may change before he is through with his studies, goes in for medicine because nothing better opens before him in this country.

MARRIAGE AND PROGENY IN AUSTRIA

The Vienna board of health publishes some interesting statistics of the ages of men and women at marriage. A period of ten years has been chosen for fair comparison, and it is found that of all the men married during that period only 0·1 per cent. were under twenty; the same percentage of girls (0·1) were under sixteen and 6 per cent. were under twenty. In the age-group 20–25 we find 8 per cent. of the male partners and 25 per cent. of the females. The next five-year age-group, 25–30, shows nearly 50 per cent. of males and 40 per cent. females. Thus the majority of the population marry before they pass the thirtieth year of life, and the most favoured age is 25–30 for both sexes. After this the frequency of marriage quickly diminishes, for we find only 1·5 per cent. of men marrying between fifty and sixty and only 0·7 per cent. above the latter age. With the women, the figures were: 0·5 per cent. married between fifty and sixty, 0·2 per cent. between sixty and seventy, and less than 0·1 per cent. after that. As a rule there is a difference of about five years between the ages of the bride and bridegroom in the favoured periods of marriage: 65 per cent. of all brides belonged to the age-group 20–30, and just as many men in the age of 25–35. Within the last five years the average marriage age has gone up, especially in the rural districts, where as a rule the couples are mostly older than in towns. This is perhaps due to the feeling of the rural population that there is nothing blameworthy in a young woman having an illegitimate child. The parents are in no hurry to marry, and indeed may later marry other partners, no blame being attached to the woman.

The Board of Health's report also gives information about the relative age of parents and children. Of all children 45 per cent. were born within the first ten years of matrimony, and 10 per cent. within the first three years. In 5 per cent. of the births the mother was over forty (no figure is given here for the fathers' age). About 1·5 per cent. of the children had fathers over fifty (the age of the mothers is not stated). It is interesting that 0·5 per cent. of the births took place twenty years or longer after the marriage. The oldest mother within the period of observation was 49½ at the time of her baby's birth, the oldest (supposed) father 72. Altogether the number of couples without children is growing rapidly and alarmingly in the towns, as everywhere in Europe. The decline of the births is over 50 per cent. in the last decade. It may be added here that the number of illegitimate births declined only by 15 per cent. so that relatively these are going up.

DEATH OF PROF. PAUL

A few days ago Dr. Gustav Paul, formerly director of the Federal Vaccination Institute, died at the age of 76. He was a native of Prague (then an Austrian city), and soon after his graduation was appointed assistant at the Medico-forensic Institute there. He then served in the public health department of the Ministry of the Interior, and in 1895 took over the charge of the new institute in Vienna for producing vaccination lymph. He was the discoverer of the corneal test for the early diagnosis of small-pox, and the modern equipment of the institute and its excellent organisation are entirely due to him. He also originated the therapeutic use of lymph for cutaneous therapy of chronic rheumatism, which is much used in Central Europe.

NEW HOSPITAL FOR ILFORD.—The Ilford council have accepted a tender from the Essex county council for the site of the old Ilford pumping station on which a new hospital of from 300 to 500 beds is to be built. The new hospital is intended to serve Barking and Dagenham, leaving the King George Hospital to provide for the northern area.

KING EDWARD VII. HOSPITAL, WINDSOR.—This hospital is starting a contributory scheme, to which members are to contribute a shilling a week and in return receive a sum not exceeding £28 a year in any twelve months towards the cost of hospital or nursing-home treatment for themselves or for their wholly dependent relatives. So long as accommodation is available they will be received at the King Edward VII. Hospital, in the private wards, but if this is not possible they will be able to make arrangements with another hospital or nursing-home. Applicants over sixty years of age will not be admitted, and the scheme does not provide for treatment of any notifiable disease, or for maternity or chronic cases.

PANEL AND CONTRACT PRACTICE

Group Practice in America

THE problems of medical practice in America appear to resolve themselves into two: (1) How can medical care be made more efficient and free from fee-splitting and other stigmata of commercialism? (2) How can such care, with adequate remuneration for the doctors giving it, be brought within the economic resources of the poorer members of the community? For the solution of the first problem Dr. Hugh Cabot in his recent book[1] favours an extension of group practice, which is now increasing in America. The first group, and of course the most outstanding, is the Mayo Clinic, which began in 1887, and there are now about 150 groups covering a very wide area. The group includes general practitioners and specialists with laboratory aids working as a medical and financial unit, the fees being paid not to the individual doctors but to the group. There is a growing tendency to extend the facilities afforded by the group to isolated practitioners in country districts, and so enlarge the group's area of influence. The group is in fact an example of evolution by differentiation and integration.

The second problem presents, perhaps, more formidable difficulties. Compulsory health insurance has been suggested as a solution, but Dr. Cabot, though alive to the advantages secured in Europe, and especially in this country, by this measure, is doubtful whether it would succeed in America. Fifteen years' experience of prohibition does not encourage him to view with approval any further attempts to impose compulsion on a large scale on the American people. Moreover, he attributes the success of the British health insurance system largely to the fact that it is administered by officers trained in public administration whose appointment and tenure do not depend on political influence, and he can see no adequate body of such administrators in his own country. He favours a development of voluntary insurance, particularly the insurance now offered by some of the groups, an extension of the medical care now provided by many large employers, and a definite assumption by the State of responsibility for the provision of medical care for the indigent—a responsibility which in most American communities is fulfilled very imperfectly or not at all. He feels strongly that something effective ought to be done, and dissents from the view apparently taken by "organised medicine" in America—the Christian Science view that the difficulties of providing adequate medical care are imaginary, and that the doctors may safely, in the words of Mr. Dooley, "turn the job over to Destiny."

In other respects too Dr. Cabot's book may well be studied by all who wish to come to a right understanding on the proper relation of doctor and patient in a modern community. Dr. Cabot is well known in this country, for during the late war he commanded a British base hospital. His recollections go back to the last decade of the last century, the heyday of the family doctor, when people lived in smaller communities, where the local doctors knew every member of the families they attended and acquired a fund of information on family characteristics that was of great help in diagnosis, prognosis, and treatment. He tells how some 35 years ago he assisted at a consultation attended by three Harvard professors on a case of pneumonia. When the professors after mature consideration had arrived at a favourable prognosis it occurred to one of them to ask the views of the family doctor. "He remarked tersely that the patient was a Jones before she married; that Joneses who showed abdominal distension on the fourth or fifth day of pneumonia died; and that she would die within the week. She did." But such intimate knowledge of family peculiarities has, Dr. Cabot thinks, become practically impossible in these days with the rapid shifting of population and the increasing reliance of the public on specialist services. In America specialism is far more developed than in this country; in some large cities over 60 per cent. of the practitioners are engaged in some form of special practice.

In certain quarters this development is deplored as undesirable and unnecessary. The American Medical Association have apparently accepted the proposition "that more than 80 per cent. of all the ailments for which people seek medical aid can be treated most cheaply and most satisfactorily by a family physician with what he can carry in a handbag." From this proposition, or dogma as he calls it, Dr. Cabot dissents; it seem to him to clothe the overworked general practitioner with powers beyond the capacity of the human mind. He thinks that the immense advances in knowledge and technique of the last 20 years have made specialist services necessary over a very wide field, which is likely to expand with further advances. He is, however, aware of the evils of specialism under commercialised conditions of practice, one of the worst being fee-splitting, which, it appears, is prevalent in some parts of America. Dr. Cabot tells of a questionnaire on the subject addressed to 105 doctors, not members of the local medical society, of whom 57 replied that they were in favour of fee-splitting, and 48 that they were against it. He thinks the practice is increasing and that the profession must either destroy it or be content to be destroyed by it.

Conflicting Tribunals

A case noted under this heading (Oct. 19th, p. 920) has had a sequel in the Courts when an action by the father of the deceased girl against the insurance practitioner concerned was heard. The case for the plaintiff ran into part of two days, but the judge stopped the case without calling on the defence as no cause of action had been disclosed and he was satisfied there was no cause for complaint against the doctor. The facts of the case were simple. At 11.30 P.M. on a certain Friday the insured person was suffering with acute pains in her stomach. The pains and vomiting became worse and the services of the doctor were sought some time after midnight. The doctor did not visit the patient but gave the father a small bottle of medicine, prescribing the dose, and indicating that the girl should be seen on the following morning. By 7 A.M. the girl was definitely worse and the doctor was again called. On this occasion he examined the girl and telephoned for an ambulance to take her to hospital where an immediate operation was performed. She died early on the following day, the cause of death being (*a*) heart failure due to toxæmia, (*b*) general peritonitis due to (*c*) perforated duodenal ulcer. The doctor's statement was that he had treated the girl for indigestion and severe constipation a few months previously and thought it was quite possible that she was

[1] The Doctor's Bill. By Hugh Cabot, C.M.G., M.D., a senior consulting surgeon in the Mayo Clinic. New York: Columbia University Press. 1935. Pp. 313. 15*s*.

suffering from a similar attack. The father did not in any way convey to him the impression that his daughter was seriously ill, and appeared quite satisfied when he left the house with the medicine. According to the doctor he told the father that he would call and see the patient early on the following morning.

On and Off the Medical List

An insurance practitioner whose name was removed from the medical list of an insurance committee as from a date in 1924 now desires to secure readmission to the list in another area. He has applied to the Minister of Health for the restoration of his name, and in accordance with custom the Minister has invited the views of the insurance and panel committees before he accedes. The doctor has produced testimonials on his behalf from medical practitioners who speak well of his conduct during the past few years and express the opinion that he can be relied upon not to repeat conduct of the kind which led to his removal from the list. Both committees have decided to raise no objection, but the insurance committee pointed out quite properly that notwithstanding it is eleven years since the name was removed from the list they do not regard the mere efflux of time as a sufficient reason for permission to rejoin.

Any doctor has a right to the inclusion of his name in the list subject to his accepting service under the terms in force; in the case of chemists the committee are required to consult the pharmaceutical committee before including their names. It sometimes happens that applications for inclusion in the medical list are made by doctors who clearly cannot comply with the terms of service, and insurance committees are sometimes a little embarrassed in view of the fact that they have no right to refuse such applications. For instance, the Kent committee have just considered an application for inclusion in their list of a doctor whose surgery is situated in the heart of London. In applying to Kent he states that the districts in which he undertakes to visit insured persons are contained within a radius of two miles of his address in London, and as this radius does not include any part of the county of Kent the committee take the view that the application is not one to which they can accede and they have informed the doctor accordingly.

Gin

A Kentish doctor who was surcharged 10*d.* for the supply of 1 oz. of gin in mixture to an insured person has appealed against the decision. In entering her appeal she submitted that the mixture supplied is a recognised formula in the treatment of insomnia in cases of pulmonary tuberculosis. The insurance committee have informed the panel committee that in their view the order for gin was not necessary, inasmuch as it was open to the doctor to order an official preparation which would have produced a similar effect.

PUBLIC HEALTH

Puerperal Pyrexia

THE decision taken nearly ten years ago to make puerperal pyrexia compulsorily notifiable was bound to bring several administrative problems in its train. For the first time a symptom rather than a disease was included in the list of conditions which must be notified to the medical officer of health, and this has not yet been fully realised by many practitioners. The definition of puerperal pyrexia as contained in the P.H. (Notification of Puerperal Fever and Puerperal Pyrexia) Regulations, 1926, is quite clear and cannot be too often emphasised; it is—

"any condition (other than puerperal fever) occurring in a woman within 21 days after childbirth or miscarriage in which a temperature of 100·4° F. or more has been sustained during a period of 24 hours or has recurred during that period."

The practitioner is not required to make a diagnosis as to the cause of the fever; the fever by itself renders the case notifiable.

The question is repeatedly asked: is notification intended to cover the whole period of pregnancy? It seems clear from the definition given above that it does so, since the term "miscarriage" is not limited to any stage of pregnancy. The question has not been decided by any legal ruling, but it is understood that the Ministry of Health has expressed the opinion that it is desirable on medical grounds that notification should not be limited to cases of fever occurring after the birth of viable children but should also include infection subsequent to abortion and miscarriage. This construction of the regulation should be widely known.

To whom should notification be made? The rules governing this were altered somewhat by the amending regulations of 1928, in which the original notification to the medical officer of health of the area "within which the place of residence of the patient is situate" was changed to "within which (the notifying practitioner) is attending such woman." This was done in order to correct the anomaly of cases being primarily notified to the medical officers of districts far away from where the confinement took place and infection occurred, and it covers such cases as the large group who are confined in central institutions out of the area in which they reside and those who "go home to mother" for their confinement. An exception was made in the case of London, where cases arising in a hospital must be notified to the medical officer of the borough from which the patient was brought into the hospital. This was done in order to abolish the previously existing discrepancy between notification of puerperal fever and puerperal pyrexia. Cases which are brought into a district for treatment in a hospital after notification elsewhere, like all other notifiable infectious diseases, should not be re-notified or included in the returns of the district (R.G.'s Circular No. 51, 1934).

Lastly, on whom does the responsibility for providing assistance in diagnosis and treatment rest? The answer is (M. of H. Circular No. 722, 1926) that the authority for maternity and child welfare of the district in which the case occurs is clearly in the best position to render such assistance, either directly or by arrangement, and the M.O.H. of an area which is not an authority for maternity and child welfare who receives a notification of puerperal fever or pyrexia is required to forward it within 24 hours to the county medical officer.

FIFE AND KINROSS JOINT ASYLUM, CUPAR.—Plans for an extension to this hospital which will cost £42,400 have been accepted by the asylum committee. The extension provides for a main corridor with seven ward blocks.

CORRESPONDENCE

THE INDEPENDENT MIDWIFE

To the Editor of THE LANCET

SIR,—All who are interested in the practice of midwifery will thank you for the informed and sympathetic leading article on the independent midwife which was published in your last issue. The grave economic difficulties of the independent midwife were emphasised in the report of the Joint Council, to which reference is made in your article, and the data given by Lady Forber in her Fynes-Clinton lecture furnish convincing proof of the severity of these difficulties. Notwithstanding the drive to hospital which has been going on in recent years, domiciliary midwifery is still, and will probably remain, the basis upon which an organised maternity service must be built up. Midwives attend approximately 60 per cent. of all confinements in this country, and their work is done almost exclusively in the homes of the industrial classes. They therefore constitute a highly important unit of the maternity service as it exists at present, and it is an interest, not only of the medical profession, but also of the public, that their work should attain a high degree of efficiency. Midwives who are working under conditions of economic hardship, or even as we now know of actual privation, cannot give of their best, and it is unquestionable that suitable measures to improve their lot are long overdue.

Recent utterances of the Minister of Health suggest that the Government intend to establish a salaried service of midwives; this will provide full employment, adequate emoluments, and security for those who enter it. Unfortunately the number of midwives practising is considerably in excess of the number actually required; consequently a choice will have to be made and those who do not enter the salaried service will, if they remain in practice, be exposed to the existing economic difficulties. The problem of how to improve the lot of this remainder is both complex and difficult. It should, however, be borne in mind that not all of them are entirely dependent for a livelihood on what they earn as midwives. An unspecified proportion of them are "part-time" midwives, who have other means of support, and sometimes follow other occupations when not actually engaged in maternity work. There is much to be said for the view that a midwife's work should always be a "whole-time" job; she will not do her best unless she is in it heart and soul, nor can she maintain her professional efficiency if there are long or frequent intervals in which her attention is turned to other pursuits. There is reason to believe that many part-time midwives turn to other occupations because they cannot get enough cases to earn a livelihood, but many others are part-time midwives from choice, and take cases only as a means of earning a little extra money when required.

The liberty which midwives now possess to regard midwifery as a subsidiary interest, and not as a serious profession which demands their whole attention, is an anomaly which is detrimental to the interests both of the public and of themselves. It may be difficult to end this anomaly at a stroke, but it is inconceivable that it should remain as a permanent feature of our midwifery system.

I am, Sir, yours faithfully,

London, W., Nov. 4th. T. WATTS EDEN.

To the Editor of THE LANCET

SIR,—The Midwives' Institute has agreed in principle with the establishment of a service of salaried midwives, but it has always realised that, if such a service is to be successful, the competent midwives now in practice must be retained so far as is possible. The returns for the questionnaire sent by the Institute to independent midwives, and ably reviewed by Lady Forber in a preliminary survey at the Fynes-Clinton lecture which you discuss in your leading article of Nov. 2nd, do in fact show that the middle-aged private midwife is the stand-by of the mother, especially in urban areas, and as is well known her records are for the most part excellent.

It has to be recognised that until schemes can be devised to make recruitment to the midwifery service an attractive and permanent profession to young well-educated women, both by regulation of the number of entrants and the provision of a longer and better training, both expediency and justice will be best served by making full use of the most experienced of the present-day midwives. It also needs to be realised that the midwife who is employed as a full-time worker requires adequate pay; her expenses which must be incurred in connexion with her profession are considerable and include the provision of uniform, apparatus, telephone, and suitable domestic help. The Institute is making further detailed inquiry into the cost of these items, but it is certain that the midwife's salary should not, on the above grounds alone, be in any case less than that now given to health visitors; and further, in assessing salaries above the minimum, the greater responsibility of the midwife should be taken into account.

The Midwives' Institute, although it holds fast to the conviction that the midwife must always hold full personal responsibility for her own part of the work, knows well that safe pregnancy and parturition require the close coöperation of doctors and midwives.

I am, Sir, yours faithfully,

E. M. PYE,
President, the Midwives' Institute.

57, Lower Belgrave-street, S.W., Nov. 4th.

THE TOXÆMIA OF BURNS

To the Editor of THE LANCET

SIR,—Patients who die during the first four days following the infliction of a severe burn are generally debited to that nebulous and all-pervading entity known as "toxæmia," the Atlas or Hercules of surgery and midwifery, on whose broad shoulders is placed responsibility for nearly every catastrophe not clearly due to a known deadly agent. With the adoption of the tannic-acid treatment of burns by E. C. Davidson, of Detroit, in 1925, the percentage of deaths in the stage of "acute toxæmia" fell significantly: an improvement ascribed, quite justifiably, to the coagulating effect of tannic acid on soluble protein, resulting in less absorption of some toxic and supposedly albuminous substance dissolved and possibly denatured. It is stated in the Medical Research Council's special report (No. 141, p. 10): "No antibodies (to these toxic substances) are produced." Sepsis, in these cases, is yet to be controlled, as the same report admits in the con-

cluding paragraph: "Further therapeutic advances will follow the lines of simplifying and shortening the methods for inducing coagulation, and of more efficiently preventing and controlling sepsis." In the absence of sepsis, the M.R.C. authorities seem to imply, there can be no toxæmia due to bacteria; the first four days' sickness, they conclude, is too early for any possible bacterial action.

It occurred to me that a proportion of the cases dying of "acute toxæmia" during the four dangerous early days might be accounted for on the assumption that their symptoms were due to the absorption of staphylococcal toxin. This theory I have not yet had the opportunity of testing on any effective scale, but I think it worthy of consideration. One case of an adult whom I had treated for an independent condition with a long course of staphylococcal toxoid injections fell and was dragged while playing polo and sustained a very extensive graze, including the skin over nearly the whole of his back and shoulders. This healed without any signs of sepsis or toxic absorption—a most unusual result. More important, Prof. R. Cruickshank (Jour. Path. and Bact., Sept., 1935, p. 367) found *Streptococcus hæmolyticus* in the skin of half his burn cases on the second day; *Staphylococcus aureus* was also frequently present, and *Staph. albus* in 56 per cent. of cases on the first day. Staphylococcal toxin can be produced in the body very rapidly, and its effects may not be preceded by any display of "sepsis," as the Bundaberg disaster taught us. I suggest that every case of severe burn should receive intravenously, at the earliest possible moment, an injection of staphylococcal antitoxin amounting, for an adult of normal size, to at least 5000 international units. I believe it is the practice in some hospitals to give streptococcal antitoxin prophylactically; the staphylococcal antitoxin could be combined with this.

People constantly exposed to the risk of se ere burns, by nature of their employment. could be treated prophylactically with a course of staphylococcal toxoid injections.

I am, Sir, yours faithfully,

FRANK MARSH.

Pathological Laboratory, c/o Anglo-Iranian Oil Co., Ltd., Masjid-i-Sulieman, via Ahwaz, South Iran, Oct. 20th.

BREATHING EXERCISES IN ASTHMA

To the Editor of THE LANCET

SIR,—My attention has just been called to an article by Dr. J. L. Livingstone in THE LANCET of Sept. 28th entitled the Value of Breathing Exercises in Asthma. I feel bound to add from first-hand knowledge some facts to his account. I was chairman of King's College Hospital from 1929 to 1933; as over a long period of years Miss Seyfang had effected complete and lasting cures for asthma for many of my relatives and friends by means of breathing exercises, and as she was perfectly willing, indeed anxious, to place the exercises that she had devised into a system after years of study and training at the disposal of the medical profession, I suggested to Dr. Livingstone that she should work in the Asthma Clinic at King's so that her methods could be observed and the results tabulated. This was arranged, and as a consequence Dr. Livingstone told me himself that he had never before seen anything to approach the successes obtained by the exercises. Unfortunately in arranging for their extension he took the view that no training was necessary in them for the giver. They were incorrectly given in consequence, and as any failure would then have been attributed to Miss Seyfang's system she, with my approval and indeed at my advice, ceased to give her services. She had given them for nearly two years on a purely honorary basis and with undisputed success. Dr. Livingstone says in his article that the system of exercises used by Miss Seyfang "differed only in detail" from those already known. I cannot recall that any breathing exercises for asthma were successfully used at King's before her advent, and in any case surely that remark is equivalent to a practitioner saying that he knew that a certain cure was good for a certain disease but that he did not know, in detail, what the prescription should be.

Miss Seyfang has never complained of the ungenerous treatment she received, but has continued her extremely successful work in her own clinic, and has earned the lasting gratitude of all who have been to her.

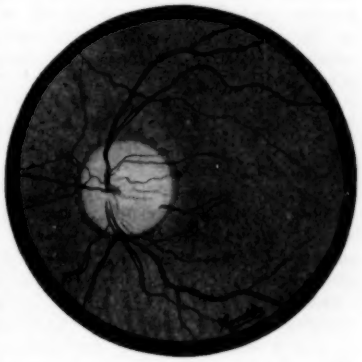
I am, Sir, yours faithfully,

31, Kensington-square, W., Oct. 31st. GORELL.

QUININE AMBLYOPIA

To the Editor of THE LANCET

SIR,—As cases of quinine amblyopia are rare in this country, the enclosed picture of the left fundus of a patient's eye may be of interest to some of your readers. The disc is atrophic, and some of the arteries have become thread-like, while the visual fields were contracted peripherally. In spite of these changes, after a few injections of strychnine, the patient got full vision with glasses for a small amount of myopia.



The patient was seen for Dr. G. Hume (who was away), and the history was that after being away from white people for two years, doing administrative work among natives in Africa, he developed obsessions and, being invalided home, tried to end his life by taking 60 grains of quinine. He went blind and deaf, but when I saw him sight and hearing had somewhat recovered. He was 26 years of age. The cerebro-spinal fluid was normal, but the blood gave a very faint Wassermann reaction, which was not confirmed later. As the fundus, visual fields, and history are typical of quinine poisoning, and there were neither history nor signs of syphilis, that can be excluded.

My friends in the tropics tell me that 15 grains of quinine sometimes make patients uncomfortable. My chemist-patients and friends here tell me that women try it as an abortifacient, but generally get frightened and give it up on the first signs of giddiness, headache, deafness, or interference with their sight—symptoms which may be produced by doses of 15–30 grains.

I am, Sir, yours faithfully

Harley-street, W., Oct. 29th. SYDNEY TIBBLES.

ATTITUDE OF SURGERY TO HÆMATEMESIS

To the Editor of THE LANCET

SIR,—Correspondence on Mr. Gordon-Taylor's address has been so much taken up with discussion of Prof. Finsterer's statistics that I hope I may be allowed to bring back attention to those the author gave from his own practice. Mr. Gordon-Taylor's addresses are always stimulating and refreshing—stimulating in their surgical ideas and refreshing in their phraseology. Statistics from his pen are not antagonistic things inviting criticism, but they are none the less worthy of consideration.

We read that for the period 1919–24 he operated on 22 cases of hæmatemesis from peptic ulcer with 2 deaths; he makes it clear that in this period the cases on which he operated were mostly dealt with in the first twenty-four hours. During the period 1924–26 he operated on 10 cases with 4 deaths, but these were mostly later cases. A spirit of self-criticism and disinclination to operate induced an abstention from active surgery for five years, and during this time the mortality of acute hæmatemesis from chronic ulcer in cases which he saw was enormous. We read further that the mortality of cases of hæmatemesis from chronic ulcer of the stomach or duodenum treated medically at the Middlesex Hospital from 1924 to 1933 inclusive, in which a second large hæmorrhage occurred, was no less than 78 per cent., and that with each successive bleeding the death-rate mounted higher. A return to active surgery was obviously indicated, for we may take it that the treatment as carried out by the physicians of the Middlesex Hospital left nothing to be desired, and it is worthy of note that the medical department of this hospital is responsible for one of the most recent advances in treatment—the adoption of the blood-drip transfusion.

The question as to the type of operation to be performed in any particular instance is perhaps more debatable. In assessing Prof. Finsterer's figures on gastrectomy for hæmatemesis it must not be forgotten that this distinguished surgeon has perhaps the most extensive experience in the world of the operation of gastrectomy, and on his own confession has performed the operation more frequently than appendicectomy—an experience which must be unique. Should it become customary for British surgeons to perform gastroduodenal resection in every case of acute hæmatemesis due to peptic ulcer the result might be disastrous. Gastrectomy seems to be an unnecessarily severe operation for a desperately ill patient, granting even the facilities of blood transfusion and up-to-date institutional equipment. I do not wish to convey that Mr. Gordon-Taylor is a strong protagonist of gastrectomy in these cases, for he expressly states in his address that the technique he adopts varies in different cases and is dictated by various considerations.

Dr. Aitken's request that surgery should be restricted to the minimum of interference agrees with the teaching of Mr. James Sherren at the London Hospital. Like Mr. Gordon-Taylor, Mr. Sherren was a strong advocate of operation as soon as possible after the first hæmorrhage, but he was usually content with ligation of arteries, or, if need be, exposure of the ulcer and direct control of the bleeding point; resection where necessary was confined to the ulcerated area. Prof. Finsterer is opposed to the ligation of the gastroduodenal artery in cases of hæmorrhage from a posterior ulcer of the duodenum, for he believes that in about 4 per cent. of cases the anastomosis around the head of the pancreas is not adequate. It seems doubtful whether this is a serious objection when we consider that in a proportion of cases of duodenectomy there must be material interference with this artery in the course of the operation.—I am, Sir, yours faithfully,

Harley-street, W., Nov. 5th. MICHAEL SMYTH.

CHRONIC NASAL SINUSITIS AND MENTAL DISORDER

To the Editor of THE LANCET

SIR,—The review of my book in your journal of Sept. 21st states (p. 669) that "the finding of sinusitis in patients who died in mental hospitals, often after many years of institutional life, cannot be taken as ætiologically significant in the absence of control data." As this statement might be taken to imply that sinusitis develops as the result of residence in mental hospitals, I have collected the data relating to 572 consecutive post-mortems. These show:

(1) That the amount of sinusitis in mental hospital patients actually *decreases* at a steady rate during the time they are in hospital, many persons after more than 30 years' stay in hospital having sinuses of perfectly normal appearance.

(2) That chronic sinusitis has no special relationship to age (being found in infants a few weeks old), since patients over 80 may have sinuses of quite normal appearance.

(A)			(B)		
Time in hospital.	Cases.	Sinusitis. Per cent.	Ages in years.	Cases.	Sinusitis. Per cent.
1 month or less ..	91	65	0–20 ..	10	70
1–12 months ..	122	62	20–30 ..	49	61
1–5 years ..	152	57	30–40 ..	87	68
5–10 ,, ..	74	56	40–50 ..	128	56
10–20 ,, ..	80	56	50–60 ..	134	52
20–30 ,, ..	37	57	60–70 ..	105	55
Over 30 ,, ..	16	44	70–80 ..	49	65
			Over 80	10	70
—	572	—		572	—

In a consideration of the figures supplied one must avoid the error of relating the actual sinusitis to the mental disorder; since it is only special complications arising from the sinusitis, such as a periodic bacteriæmia, or a continued local spread of toxins towards the brain, which are of importance in this connexion. Such complications are ætiologically related to pathological brain changes which cause local defect of function; in some cases this is shown by abnormal behaviour or bizarre mental phenomena. Histological spreading of organisms from a nasal sinusitis has been demonstrated in some mental patients, and it is probable that clinical investigation will show that a previously unsuspected large proportion of cases of chronic nasal sinusitis sooner or later show abnormal mental symptoms or behaviour.

Exactly however what is demanded or meant by "control data" is not clear.

I am, Sir, yours faithfully,

F. A. PICKWORTH.

City and University of Birmingham Joint Board of Research for Mental Disease, Birmingham, Oct. 28th.

*** The statement implied nothing but the need for controlled data. These would consist of an adequate number of observations on the frequency of nasal sinusitis, investigated and determined by Dr. Pickworth's procedure, in persons mentally healthy but living under conditions as similar as possible to those of Dr. Pickworth's mental hospital patients. The substitution of "pyorrhœa" for "sinusitis" may serve to illustrate the need for such controlled data.—ED. L.

MEDICAL GRADUATES FOR PARLIAMENT

SEVENTEEN members of the late House of Commons held a medical qualification, two of whom—Dr. G. B. Hillman and Dr. Joseph Hunter—died during the session. Of the remainder, two have been re-elected without opposition.

Name.	Constituency.	Party.
Prof. T. Sinclair	Queen's University, Belfast.	C.
Dr. J. H. Williams	Carmarthen (Llanelly)	Lab.

Thirteen others are standing for re-election along with fourteen new candidates, seven of whom have contested Parliamentary seats before. In the following list those who sat in the last Parliament are indicated by a dagger sign, those who have sat in any previous Parliament by a double dagger, and those who have stood before without success by an asterisk.

LONDON BOROUGHS

Candidate.	Constituency.	Party
†Dr. Alfred Salter	Bermondsey (West)	Lab.
*Dr. C. R. Cooke-Taylor	Camberwell (Dulwich)	L.
†Dr. J. D. Cooke	Hammersmith (South)	C.
Dr. G. de Swietochowski	Paddington (North)	L.
Dr. Elizabeth Jacobs	St. Marylebone	Lab.
Dr. S. W. Jeger	St. Pancras (South-East)	Lab.
†Dr. W. J. O'Donovan	Stepney (Mile End)	C.
†Sir Henry Jackson	Wandsworth (Central)	C.

ENGLISH BOROUGHS

Dr. Edith Summerskill	Bury	Lab.
Dr. D. McIntosh Johnson	Bury	L.
*Dr. Percy McDougall	Manchester (Rusholme)	Ind.
†Dr. J. W. Leech	Newcastle-on-Tyne (West)	C.
*Dr. R. A. Lyster	Preston	Lab.
†Dr. A. B. Howitt	Reading	C.
‡Mr. Somerville Hastings	Reading	Lab.
*Dr. C. W. Brook	Smethwick	Lab.
Dr. S. Segal	Tynemouth	Lab.

ENGLISH COUNTIES

†Sir John Worthington	Gloucester (Forest of Dean)	N. Lab.
†Sir Francis Fremantle	Herts (St. Albans)	C.
†Dr. H. C. Haslam	Lincs (Horncastle)	C.
†Rt. Hon. C. Addison	Wilts (Swindon)	Lab.

WELSH COUNTIES

‡Dr. L. Haden Guest	Brecon and Radnor	Lab.
†Dr. J. H. Morris-Jones	Denbigh (Denbigh)	L. Nat.

SCOTTISH BURGHS

Dr. R. A. Barlow	Edinburgh (Central)	L.
†Rt. Hon. Walter E. Elliot	Glasgow (Kelvingrove)	C.

SCOTTISH COUNTIES

*Dr. W. S. Russell Thomas.	Aberdeen and Kincardine (Central)	L.

UNIVERSITIES

†Sir Ernest Graham-Little	London University	Ind.

C=Conservative. Ind.=Independent. L.=Liberal. L. Nat.=Liberal National. Lab.=Labour. N. Lab.=National Labour.

BRIEF PERSONAL NOTES

Right Hon. CHRISTOPHER ADDISON, M.D. Lond., F.R.C.S. Eng., who was the first Minister of Health (1919–21) and Minister of Agriculture in the Government of 1929, was at one time professor of anatomy at University College, Sheffield. He has also been Hunterian professor at the Royal College of Surgeons, and lecturer on anatomy at St. Bartholomew's Hospital.

RICHARD A. BARLOW, B.Sc., M.B., F.R.F.P.S. Glasg., who is standing for Edinburgh, Central, is senior partner in a general practice at Rochdale. He qualified at Glasgow University in 1913 and has held appointments in Glasgow and Cape Town.

C. W. BROOK, M.R.C.S. Eng., qualified from St. Bartholomew's Hospital in 1925. He has for the last four years represented Southwark North on the London County Council in the Labour interest and has been chairman of the committee for welfare of the blind. He stood unsuccessfully for Wandsworth in 1929.

J. DOUGLAS COOKE, M.B. Melb., F.R.C.S. Eng., qualified in Australia and was resident at the London Hospital. He practised for twenty years at Stanmore and contested Peckham unsuccessfully, before gaining the seat at Hammersmith (South).

C. R. COOKE-TAYLOR, M.R.C.S., D.P.M., took honours in jurisprudence at Oxford and was called to the bar in 1910. He qualified from University College Hospital in 1927. He is visiting physician to the British Hospital for Nervous and Mental Disorders, and psychologist to the Ex-Service Welfare Society. This is the eighth time he has contested Dulwich; he stood for Holborn in 1910. He is hon. treasurer of the University of London Liberal Association.

Right Hon. WALTER E. ELLIOT, M.C., M.B., D.Sc. Glasg., LL.D. Aberd., who first entered Parliament in 1918, was Under Secretary of Health for Scotland in 1923. He has been Minister of Agriculture and Fisheries since Sept., 1932.

Sir FRANCIS FREMANTLE, O.B.E., M.D., M.Ch. Oxon., F.R.C.S. Eng., F.R.C.P. Lond., has sat in six Parliaments as member for the St. Albans division, and has been chairman of the Parliamentary medical committee. He was for fifteen years county medical officer of health for Herts, and is deputy lieutenant and a justice of the peace.

Sir ERNEST GRAHAM-LITTLE, B.A., Univ. Cape of Good Hope, M.D., F.R.C.P. Lond., who has represented the University of London since 1924, is in charge of the skin department at St. Mary's Hospital, London. He has been a member of the University senate since 1905 and has long been chairman of the external council. In the last Parliament he was chairman of the road accidents Parliamentary group.

L. HADEN GUEST, M.C., M.R.C.S., was member for North Southwark in 1923 and became Parliamentary private secretary to the Minister of Health. He has been school medical officer, consulting physician to St. George's school clinic, Blackfriars, and a member of the London County Council.

HENRY C. HASLAM, M.A., M.B., Sc.D. Camb., has been member for the Horncastle division of Lincoln since 1924. Before that he spent twenty years in biochemical research at Cambridge, holding the John Lucas Walker studentship.

SOMERVILLE HASTINGS, M.S. Lond., F.R.C.S. Eng., who is surgeon and lecturer to the ear and throat department of the Middlesex Hospital, is contesting Reading for the fifth time. He sat for Reading in two previous sessions but was defeated by Dr. Howitt at the last election; in 1923–24 he was private Parliamentary secretary to the President of the Board of Education. He represents Stepney (Mile End) on the London County Council and is chairman of the hospitals and medical services committee. He is president of the Socialist Medical Association.

A. B. HOWITT, C.V.O., M.D. Camb., was Epsom scholar at St. Thomas's Hospital, qualifying in 1906, and holding a number of hospital appointments, including that of resident medical officer at St. Thomas's Home. This is the fourth time he has stood for Parliament. He contested Preston in the general election of 1929 and again two months later at a by-election. In the 1931 election he defeated Mr. Somerville Hastings at

Reading and he is standing again for the same constituency. He has been secretary to the Parliamentary medical committee for the past four years.

Sir HENRY JACKSON, Bart., M.A. Camb., B.Sc. Lond., M.B. Edin., who was formerly senior tutor and lecturer at Downing College, Cambridge, and in general practice on Putney Hill, was Mayor of Wandsworth from 1921–24. He is treasurer of the Bolingbroke Hospital, vice-chairman of the London voluntary hospitals central committee, and president of London University Conservative Association. He has represented Wandsworth (Central) in two previous Parliaments.

ELIZABETH JACOBS, M.R.C.S. Eng., who is contesting St. Marylebone, qualified from St. Mary's Hospital in 1925 and is in general practice with her husband in Maida Vale.

SANTO W. JEGER, M.R.C.S. Eng., who has a general practice in East London, qualified from the London Hospital in 1923. He was Mayor of Shoreditch in 1929 and has been for six years chairman of the public health committee. Since 1931 he has represented Shoreditch in the Labour interest on the London County Council; he is a member of the hospitals and medical services committee and vice-chairman of the parliamentary committee. Dr. Jeger is chairman of the Heatherwood Hospital and was one of the founders of the Socialist Medical Association.

D. MCINTOSH JOHNSON, M.B. Camb., who is standing for Bury, qualified from St. Bartholomew's Hospital in 1926 and after holding house appointments took charge of the Harrington Hospital (International Grenfell Association) in Labrador. He is a barrister-at-law and is now in general practice at Thornton Heath, Surrey.

J. W. LEECH, M.D., D.Ch. Durh., F.R.C.S. Edin., who was Sheriff of Newcastle-on-Tyne, 1930–31, and Lord Mayor 1932–33, is consulting surgeon to the Royal Victoria Infirmary. He is ex-president of the Newcastle Clinical Society and of Durham University Medical Graduates Association, and a county J.P. He represented Newcastle (West) in the last Parliament.

R. A. LYSTER, B.Sc. Lond., M.D., D.P.H. Birm., who contested the Winchester division of Hants in the general elections of 1929 and 1931, was county medical officer of health for Hampshire from 1908 to 1929. He has been president of the Society of Medical Officers of Health and of the Association of County Medical Officers. He has just been returned for the third time as Labour member of the Bournemouth town council.

PERCY MCDOUGALL, B.Sc. Lond., M.B. Vict., who is standing as an independent candidate for the Rusholme division of Manchester, contested the same seat at a by-election in November, 1933. He qualified at Manchester in 1894, was house surgeon at the Royal Infirmary, and has been 34 years in general practice in Fallowfield. He finds in land monopoly the great disease in the body politic.

JOHN H. MORRIS-JONES, M.C., L.R.C.P. Edin., who was returned for Denbigh unopposed at the last general election, was in general practice there for twenty years and is now senior consulting physician to the West Denbigh Hospital. For three years he has been a Government whip.

W. J. O'DONOVAN, O.B.E., M.D., M.R.C.P. Lond., is physician to the dermatological department and lecturer on dermatology at the London Hospital, which is in the centre of his constituency. In and out of the House of Commons he has made a special effort to represent the medical point of view. He is chairman of the University of London Conservative Association.

ALFRED SALTER, M.D. Lond., D.P.H., has sat for his constituency continuously since 1922. He was chairman of the medical committee during the 1929 Parliament. He is a J.P. for the county of London and an alderman of Bermondsey Borough Council. He retired from general practice in Bermondsey in 1929 and is now engaged in consultant work chiefly in connexion with claims of injured workmen under the Workmen's Compensation Acts.

SAMUEL SEGAL, B.A. Oxon., M.R.C.S. Eng., was exhibitioner at Jesus College, Oxford, and qualified from the Westminster Hospital in 1927, after which he held resident appointments there. Since 1929 he has been in general practice in north-west London.

THOMAS SINCLAIR, C.B., M.D., M.Ch. R.U.I., F.R.C.S. Eng., who has been returned unopposed for Queen's University, Belfast, holds the chair of surgery in the university, and is consulting surgeon to the Belfast Royal and other hospitals. He is a member of the General Medical Council and a senator for Northern Ireland.

EDITH C. SUMMERSKILL, M.R.C.S. Eng., who qualified from Charing Cross Hospital in 1924, is medical director of the birth control clinic at Wood Green, and member of council of the National Birth Control Association.

GEORGE DE SWIETOCHOWSKI, M.D. Munich, M.R.C.S. Eng., who is a general practitioner in Paddington, was born in Poland and qualified in this country in 1912. During the war he was civil medical officer to the 4th London General Hospital. He was the first president of the Paddington Medical Society, and one of the founders of the London public medical service. He is chairman of executive of the Medical Practitioners' Union and has represented Paddington for twelve years on the London Panel Committee.

WM. S. RUSSELL THOMAS, M.B. Camb., who is standing for the central division of Aberdeen and Kincardineshire, qualified from Guy's Hospital in 1919 and after holding resident appointments there and elsewhere settled in general practice at Warlingham, Surrey. In 1931 he contested Ilford without success. He is a barrister-at-law.

J. H. WILLIAMS, L.S.A., who qualified from the London Hospital in 1902, is partner with his son in general practice at Burry Port. He is a member of the Middle Temple, a justice of the peace, and chairman of the public health committee for the county of Carmarthen.

Sir JOHN WORTHINGTON, M.R.C.S. Eng., who is standing again for the Forest of Dean division of Gloucester, was Parliamentary private secretary to Mr. Ramsay Macdonald when Prime Minister. He comes of a medical family and qualified from the London Hospital in 1895.

LONDON MEDICAL SOCIETIES

AT the opening of a new session we are again giving for the convenience of our readers the names of presidents and hon. secretaries of London medical societies, with the addresses at which they can be approached.

Royal Society of Medicine.—President: Dr. Robert Hutchison. Hon. secretaries: Dr. Anthony Feiling and Mr. G. T. Mullally. (1, Wimpole-street, W.1.)

Medical Society of London.—President: Prof. G. E. Gask. Hon. secretaries: Mr. C. P. G. Wakeley and Dr. A. H. Douthwaite. (11, Chandos-street, W.1.)

Hunterian Society.—President: Dr. W. Brander. Hon. secretaries: Mr. M. Oldershaw and Mr. A. E. Porritt. (26, Upper Wimpole-street, W.1.)

Harveian Society.—President: Mr. L. E. C. Norbury. Hon. secretaries: Dr. A. D. Morris and Mr. John Hunter. (Hammersmith Hospital, Ducane-road, W.12.)

Royal Society of Tropical Medicine and Hygiene.—President: Sir Arthur Bagshawe. Hon. secretaries: Dr.

C. M. Wenyon, F.R.S., and Dr. Hamilton Fairley. (Manson House, 26, Portland-place, W.1.)

Royal Medico-Psychological Association.—President: Dr. Reginald Worth. Hon. general secretary: Dr. Reginald Worth. (Springfield Mental Hospital, S.W.17.)

Society of Medical Officers of Health.—President: Dr. W. G. Savage. Executive secretary: Mr. G. L. C. Elliston. (1, Thornhaugh-street, W.C.1.)

Association of Industrial Medical Officers.—President: Dr. N. Howard Mummery. Hon. secretary: Dr. Donald Stewart. (I.C.I. Metals Ltd., Kynoch Works, Witton, Birmingham.)

Tuberculosis Association.—President: Dr. L. S. T. Burrell. Hon. secretary: Dr. F. R. G. Heaf. (Colindale Hospital, Hendon, N.W.9.)

British Institute of Radiology.—President: Dr. L. A. Rowden. Hon. secretaries: Dr. R. Boulton Myles and Mr. G. E. Bell, M.Sc. (32, Welbeck-street, W.1.)

Medico-Legal Society.—President: Mr. C. A. Mitchell, D.Sc. Hon. secretaries: Mr. Ernest Goddard and Dr. W. G. Barnard. (3, South-square, Gray's Inn, W.C.1.)

London Association of the Medical Women's Federation.—President: Dr. E. M. Pickard. Hon. secretary: Mrs. Philippa Martin. (40, Wimpole-street, W.1.)

Medical Society of Individual Psychology.—Chairman: Dr. C. M. Bevan-Brown. Hon. secretary: Dr. Alexander Baldie. (7, Warrington-gardens, Warwick-avenue, W.9.)

Society for the Study of Inebriety.—President: Dr. William Brown. Hon. secretary: Dr. T. N. Kelynack. (144, Harley-street, W.1.)

The Cancer Society.—President: Dr. A. C. Magian. Hon. secretary: Dr. D. F. Kennard. (225, Euston-road, N.W.1.)

London Jewish Hospital Medical Society.—President: Dr. D. N. Nabarro. Hon. general secretary: Dr. Max Sorsby. (London Jewish Hospital, Stepney Green, E.1.)

St. John's Hospital Dermatological Society.—President: Dr. J. E. M. Wigley. Hon. secretary: Dr. I. Muende. (49, Leicester-square, W.C.2.)

Chelsea Clinical Society.—President: Mr. H. Paxton Baylis. Hon. secretaries: Mr. A. Rugg-Gunn and Mr. Robert Cutler. (8, Lower Sloane-street, S.W.1.)

Hackney Medical Society.—President: Dr. A. J. Ambrose. Hon. secretary: Dr. H. Stark. (26, Stoke Newington Common, N.16.)

Hampstead Medical Society.—President: Dr. J. Alison Glover. Hon. secretaries: Dr. John Kennedy and Dr. T. J. Hollins. (13, Belsize-park, N.W.3.)

North London Medical and Chirurgical Society.—President: Mr. John Hunter. Hon. secretaries: Dr. W. E. Snell and Dr. J. W. Campbell Maxwell. (Royal Northern Hospital, N.7.)

North-West London Medical Society.—President: Sir Harold Gillies. Hon. secretary: Mr. Lionel Green. (127, Harley-street, W.1.)

Priory Medical Society.—Hon. secretary: Dr. J. Clark Wilson. (18, College-crescent, N.W.3.)

South-West London Medical Society.—President: Dr. R. J. Saunders. Hon. secretaries: Dr. E. G. Housden and Dr. A. W. Wells. (51, Longley-road, S.W.17.)

Paddington Medical Society.—President: Dr. Alexander Baldie. Hon. secretary: Dr. S. Crown. (81, Elgin-avenue, W.9.)

West London Medico-Chirurgical Society.—President: Dr. Bernard Myers. Hon. secretaries: Mr. James Kemble and Dr. W. K. McKinstry. (128, Harley-street, W.1.)

West Kent Medico-Chirurgical Society.—President: Dr. J. R. Wyllie. Hon. secretary: Dr. C. J. B. Buchan. (267, Baring-road, Grove Park, S.E.12.)

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Rear-Admiral G. L. Buckeridge, O.B.E., M.R.C.S., has been appointed Honorary Surgeon to the King from Sept. 22nd, 1935.

Surg. Rear-Admiral F. J. Gowans to *Drake* for R.N. Hosp., Plymouth, and as M.O. in charge.

Surg. Comdrs. M. Brown to *Victory* for R.N. Hosp., Haslar; and H. H. Babington to *Pembroke* for R.N.B.

Surg. Lt.-Comdr. F. C. Bamford to *Maine*.

Surg. Lt. H. de B. Kempthorne to *Ramillies*.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. (D) H. P. Buchanan promoted to Surg. Lt.-Comdr. (D).

T. D. G. Wilson entered as Proby. Surg. Lt.

ROYAL ARMY MEDICAL CORPS

Majs. R. R. Thompson, M.C., and D. McVicker, M.C., retire on retd. pay.

Capt. H. N. Walker is placed on the half-pay list on account of ill-health.

Short Serv. Commissions.—Lts. to be Capts.: K. H. Clark, C. S. Gamble, J. A. D. Johnston, J. A. Scott, W. G. Greene, W. M. Oxley, O. R. L. L. Plunkett, R. H. Hunt, F. Williams, A. J. A. Gray, J. Reeve, G. M. Denning, H. H. Atkinson, J. O'Connell, and C. G. O'Driscoll.

Lt. (on prob.) A. Gleave is restd. to the estabt.

REGULAR ARMY RESERVE OF OFFICERS

Capt. W. W. Phillips resigns his commn.

ARMY DENTAL CORPS

W. F. O'Carroll is granted a temp. commn. in the rank of Lt.

TERRITORIAL ARMY

Majs. C. P. Oliver and A. J. Chillingworth resign their commns.

Lts. H. S. H. Gilmer and E. D. Fitzpatrick to be Capts.

ROYAL AIR FORCE

Squadron Leader W. J. G. Walker to R.A.F. Station, Kenley, for duty as Medical Officer.

Flight Lt. H. Penman is promoted to the rank of Squadron Leader.

Flight Lt. G. H. J. Williams to No. 1 Armament Training Camp, Catfoss.

Dental Branch.—Flying Offr. A. Maben to R.A.F. Depôt, Uxbridge.

INDIAN MEDICAL SERVICE

Capt. G. P. Charlewood is confirmed in his appt.

Indian Medical Department.—Capt. (Sen. Asst. Surg.) H. C. De Penning retires.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 26TH, 1935

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2889; diphtheria, 1199; enteric fever, 27; acute pneumonia (primary or influenzal), 713; puerperal fever, 49; puerperal pyrexia, 112; cerebro-spinal fever, 8; acute poliomyelitis, 23; acute polio-encephalitis, 2; encephalitis lethargica, 3; dysentery, 15; ophthalmia neonatorum, 72. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 1st was 3112, which included: Scarlet fever, 1171; diphtheria, 1203; measles, 42; whooping-cough, 246; puerperal fever, 20 mothers (plus 10 babies); encephalitis lethargica, 277; poliomyelitis, 12. At St. Margaret's Hospital there were 20 babies (plus 9 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox or enteric fever, 13 (1) from measles, 2 (0) from scarlet fever, 2 (0) from whooping-cough, 32 (6) from diphtheria, 60 (14) from diarrhœa and enteritis under two years, and 46 (9) from influenza. The figures in parentheses are those for London itself.

Measles proved fatal in 5 cases at Manchester and 4 at Liverpool. Leeds reported the only deaths from whooping-cough. Warrington had 3 fatal cases of diphtheria, Portsmouth, Liverpool, Wallasey, each 2. Influenza is credited with 4 deaths at Manchester, no more than 2 in any other large town.

The number of stillbirths notified during the week was 275 (corresponding to a rate of 44 per 1000 births), including 36 in London.

MEDICAL NEWS

University of Cambridge

On Nov. 2nd Dr. John A. Ryle, regius professor of physic in the University, received the honorary degree of doctor of medicine. In presenting him the public orator said:

Adest vir eximius, qui, nepos Theologi nostri inter patres dilecti et ad episcopatum vocati, nomen antiquum ad Universitatem nostram reportat. Sed aliis se dedit studiis maluitque "scire potestates herbarum usumque medendi," et diu artem agitavit nec illam mutam nec ipse inglorius. Δυσπεψιας enim callidus investigator, stilo quoque insignis, quinque morbi typos vult distinguere, sive sedendo quis, ut Theseus, sive imaginando ventri suo contumelias iniuriasque imponit, sive cibo toxicato—sed quid plura? Morbos vestros nolo timoribus aggravare. Adest, a Rege nostro electus, ut alumnis nostris artis eiusdem amantibus praesideat, immo ut disputando probet, antequam alma mater diplomatibus suis commendatos emittat in Britanniam aegrotantem. Londiniensis est; sed constat inter medicos, ut audio, saepe numero aegrotis salutem reddi et sanitatem transfuso sanguine, quem sanus aliquis venis suis derivari passus est. Bis iam in triennio caput amisit Facultas (ut nunc dicitur) Medicinae; sic reformatur Universitas. Speramus ergo, velut transfuso sanguine, sanari posse haec tanta vulnera, ipsique reddi salutem Medicinae. Illud enim sibi proponit ut Aesculapium colat promovendo scientiam.

The degree of M.A. was conferred, by special Graces, on Prof. Ryle and on Dr. G. P. McCullagh, university demonstrator in pathology. The following degrees were also conferred:—

M.D.—G. L. F. Rowell, R. S. Stacey, E. Fretson Skinner, and J. M. Wallace.
M.B. and B.Chir.—T. B. Jones.
M.B.—S. J. Hadfield, R. I. N. Greaves, and R. H. Brown.

Royal College of Physicians of London

At a quarterly meeting of the college held on Oct. 31st, with Lord Dawson of Penn, the president, in the chair, Dr. A. Ramsbottom, Dr. A. Feiling, Prof. O. L. V. S. de Wesselow, Prof. E. H. Kettle, Dr. R. H. Miller, and Dr. P. H. Manson-Bahr were elected councillors, and Dr. H. L. Tidy a representative on the committee of management of the Conjoint Board. The following representatives were elected: Dr. A. S. Barnes on the court of governors of the University of Birmingham; Dr. John Hay on the court of governors of the University of Liverpool; Sir Stanley Woodwark on the Central Council for District Nursing; and Dr. Arthur MacNalty on the executive committee of the Imperial Cancer Research Fund. Mr. Gavin Turnbull Simonds, K.C., was appointed senior standing counsel to the College.

The president announced the award of the Jenks scholarship to John Douglas James, late of Epsom College, and the appointment by the council of Dr. D'Arcy Hart to the Milroy lectureship for 1937. Dr. R. D. Gillespie was appointed a delegate to the fourth biennial conference on mental health in January, 1936.

The following candidates having satisfied the censors board were admitted to the membership:—

Franklin Bicknell, M.B. Oxon.; Thomas Colver, M.B. Sheff.; John Howard Fisher, M.B. Sydney; Arthur Evans Francis, M.D. Lond.; George Edward Godber, M.B. Oxon.; John Stuart Harper, M.B. Aberd.; William Albert Hawk, M.D. Toronto; Thomas Shirley Hele, M.D. Camb.; John Locke Lovibond, M.B. Camb.; William McCartan, M.D. Belf.; James Robertson Monro Mackie, M.D. Aberd.; Robert Walsh Mussen, M.D. Belf.; Lionel Everard Napier, L.R.C.P.; Neville Christopher Oswald, M.B. Camb.; Mahankali Seetharama Rao, M.D. Madras; Kenneth Moorhouse Robertson, M.D. Lond.; William Stuart Tegner, M.B. Oxon.; Samuel Edward Turvey, M.D. Manitoba; John Henry Walters, L.R.C.P.; and Sydney Lawrence Wright, M.D. Lond.

Licences to practise were conferred upon 140 candidates (123 men and 17 women) who have passed the final examination of the Conjoint Board and have complied with the College by-laws. The following are the names and medical schools of the successful candidates:—

M. M. Ali, Osmania and St. Bart.'s; I. C. Allen, Camb. and St. Thos.; W. G. R. Ashley-Emile, Middlesex; E. Ashman, Guy's; G. Bair, King's Coll.; Margaret Ball, Camb. and Royal Free; A. B. Barbour, St. Bart.'s; K. E. Barlow, Middlesex; J. E. M. Barnes, St. Mary's; H. H. F. Barns, Univ. Coll.; P. N. Baruah, Calcutta and West Lond.; W. M. Beattie, Camb. and Liverp.; H. B. Birnbaum, Glasg.; L. J. Blay, Guy's; G. L. Broderick, Camb. and St. Thos.; J. A. B. Burnett, Charing Cross; W. A. Burnett, Camb. and Middlesex; A. Z. Butt, Witwatersrand and St. Bart.'s; T. D. Chablani, Bombay and St. George's; Freda M. Chalkley, King's Coll. and West Lond.; S. L. S. Chiew, Singapore; Priscilla B. Clark and E. R. Coleman, Univ. Coll.; J. D. Cooper, Camb. and Lond.; R. N. B. Cridland, Oxon. and St. Mary's; H. W. F. Croft, Liverp.; N. Cruickshank, Camb. and Lond.; G. M. Curtois, Guy's; B. Datta, Calcutta and Lond.; D. R. Davies, Cardiff; H. L. Ellis, Middlesex; G. A. Ewen, Camb. and St. Bart.'s; R. D. Ewing, Camb. and Middlesex; J. V. L. Farquhar, Camb. and St. Bart.'s; W. Fielding, Manch.; G. M. Fleming, Camb. and Univ. Coll.; Daireen I. Forster, Royal Free; T. D. Fraser, Camb. and St. Thos.; E. D. B. Freedman, Univ. Coll. and Westminster; J. French, St. Bart.'s; S. E. Furber, Oxon. and St. Bart.'s; T. H. T. Gautby, Camb. and Middlesex; P. R. Gavin, St. Thos.; S. G. Gordon, Charing Cross; D. W. F. Gotla, Lond.; A. A. Hakeem, Manch. and West Lond.; P. B. Hanbury, Guy's; C. W. M. Harvey, St. Thos.; B. B. Hickey, Oxon. and Lond.; G. S. Hodge, Univ. Coll.; G. A. Hodgson, Oxon. and St. Thos.; R. J. House, Middlesex; W. Hughes and T. G. Humby, Guy's; R. S. Hunt, Camb. and St. Bart.'s; C. A. Hutt, St. Mary's; R. A. Johnson, Guy's; D. Joy, Univ. Coll.; E. W. Knowles, Liverp.; J. W. Lacey, Camb. and Lond.; C. Langmaid, Cardiff; B. Lee, Manch.; D. N. Leeming, Guy's; J. I. Lesh, St. Thos.; W. N. Lippitt, Birm. and Lond.; H. S. Lohgarh, Punjab and Middlesex; R. G. M. Longridge, Camb. and St. Thos.; I. B. McCrae, Witwatersrand and Charing Cross; K. G. F. Mackenzie, Camb. and St. Thos.; Ivy M. Massick, Punjab and West Lond.; Dorothy V. Mazel, Sydney and Royal Free; S. C. Mehta, Ahmedabad and Lond.; H. C. de B. Milne, Camb. and Westminster; D. W. Moynagh, St. Bart.'s; A. Mukerji, Calcutta and Middlesex; R. Mundy, St. Bart.'s; A. H. G. Munro, Durh.; E. G. Murphy, Univ. Coll.; Moira Murray, Liverp.; A. A. K. Naqshbandi, Punjab and Lond.; S. G. Nardell, St. George's; J. A. V. Nicoll, St. Bart.'s; A. R. H. Oakley, Middlesex; T. D. W. O'Flynn, St. Mary's; C. W. F. Outred, Guy's; S. Paletz, St. George's; G. W. Palmer, Camb. and St. Thos.; Nora M. Pettitt, Royal Free; G. B. S. Pimblett, Westminster; Dorothy S. Pope, Royal Free; D. A. R. Pritchard, Liverp.; C. N. Pulvertaft, Camb. and St. Thos.; J. D. Raftery, St. Mary's; C. O. Ribeiro, Univ. Coll.; D. T. Richards, Cardiff; Florence G. Richards, Birm.; M. S. Richmond, Leeds; C. G. Rob, Camb. and St. Thos.; E. T. Roberts, Edin. and Leeds; J. M. Robins, Camb. and St. Bart.'s; G. S. Robinson, Camb. and Liverp.; H. D. H. Robinson, Univ. Coll.; P. A. Robinson, Camb. and Middlesex; G. Rogers, Lond.; O. N. Roussel, Camb. and St. Thos.; E. B. Rowe, Guy's; Millicent Rowland, Punjab and Royal Free; L. M. Rubein, Lond.; A. E. K. Salvi, Guy's; H. N. Savage, Manch.; S. K. Sen, Patna and Birm.; J. A. Seymour-Jones, Camb. and St. Thos.; D. Singh, Lahore and Birm.; Marjorie Small, Adelaide and Royal Free; T. Smallhorn, St. Bart.'s; A. C. Spence, Camb. and Middlesex; S. Stein, Cape and St. Mary's; J. Stern, Lond.; L. D. Stone, Manch.; J. Suchet, Cape and St. Mary's; R. H. A. Swain, St. Bart.'s; J. R. Sweeting and Phyllis J. M. Sykes, Univ. Coll.; R. A. Thatcher, St. Mary's; F. B. Thomas, Camb. and St. Thos.; B. Thornley, Manch.; R. F. Tredgold, Camb. and Univ. Coll.; A. R. M. Waffarn, Ceylon and King's Coll.; J. T. Waldie, Guy's; Rosemary C. Walker, Royal Free; J. St. J. F. W. Wallace-Collett, Lond.; J. R. Wardley, Manch.; Norah E. Weatherhead, Royal Free; W. R. Welply, Lond.; D. O. Wharton, Camb. and Manch.; C. E. G. Wickham, St. Thos.; Sheila M. R. Williams, Royal Free; S. L. Williams, Cardiff; J. D. Wilson, St. Bart.'s; and Hilda C. Woods, Royal Free and West Lond.

Diplomas were conferred jointly with the Royal College of Surgeons as follows:—

Diploma in Public Health.—K. F. Alford, G. Busuttil, P. J. L. Capon, A. F. Cook, E. H. Hall, P. N. Kapur, A. A. Miller, C. D. Newman, and Constance L. Taylor.

Diploma in Child Health.—R. H. Bailey, D. S. Bateman, C. A. Birch, A. M. R. Cann, G. Davison, M. E. Diwany, J. H. Ebbs, L. A. Hawkins, B. McArdle, T. S. Rodgers, and A. B. Stokes.

University of Glasgow

On Nov. 2nd the degree of M.D. was conferred on W. S. Burnet.

University of St. Andrews

Mr. R. C. Alexander has been appointed to the chair of surgery in University College, Dundee, in succession to the late Prof. John Anderson.

Mr. Alexander was born in Edinburgh in 1884 and educated at George Watson's College. He studied medicine at the University of Edinburgh and in Paris, graduating M.B. Edin. with honours in 1908. He obtained a Vans Dunlop scholarship, and until the war he worked in Edinburgh, holding resident appointments at the Royal Infirmary and elsewhere. In 1911 he took the fellowship of the Royal College of Surgeons of Edinburgh, and in 1913 he was a joint holder of the Crichton research scholarship. During the war Mr. Alexander was surgical specialist attached to No. 3 Casualty Station of the Third Army in France. He held the rank of major in the R.A.M.C. and was twice mentioned in dispatches. After the war he returned to Edinburgh as assistant in the surgical department of the University until 1921, when he moved to Dundee. He was appointed hon. visiting surgeon to the Royal Infirmary there and lecturer in clinical surgery in the University of St. Andrews. In 1927 he was appointed examiner in operative surgery and surgical pathology to the Royal College of Surgeons of Edinburgh.

Hunterian Society

A meeting of this society will be held at the Cutlers' Hall, Warwick-lane, London, E.C., on Monday, Nov. 18th, at 9 P.M., when a discussion will be held on the motion that birth control is unnecessary in modern life. The opening speakers will be the Bishop of St. Albans, Dr. C. P. Blacker, Dr. Halliday Sutherland, and Dr. E. R. T. Clarkson.

British Institute of Philosophy

An address entitled The Present Need of a Philosophy will be given by Mr. C. E. M. Joad on Tuesday, Nov. 12th, at 8.15 P.M. at University College, Gower-street, London, W.C. Cards of application can be obtained from the director of studies at University Hall, 14, Gordon-square, W.C.1.

Aberdeen University Club, London

The ninety-fourth half-yearly dinner of this club will be held at the Café Royal at 7 for 7.30 P.M. on Thursday, Nov. 21st. Mr. J. M. Bulloch, LL.D., will preside, and General Sir Ian Hamilton will be the principal guest. The hon. secretary may be addressed at 16, Tregunter-road, S.W.10.

Medical Tour to the Mediterranean

The twelfth international medical tour, organised by the Société Médicale du Littoral Méditerranéen, will take place from Dec. 26th to Jan. 4th, and visits will be made to all the resorts of the French Riviera, from St. Raphaël to Mentone, as well as to the hinterland. Further particulars can be obtained from the French National Touring Office, 56, Haymarket, London, S.W.1.

Surgical Instrument Manufacturers' Association

The annual dinner of this association was held at the Holborn Restaurant on Oct. 25th, when Mr. H. Guy Drew (Down Bros.) presided. Prof. Grey Turner, who proposed "The Association," recalled his early delight in instruments of precision. The pride of the industry in its craftsmanship was something which should always be cherished. It added greatly to the interest of their work and could be passed on with the greatest possible advantage to their clients. He was indebted to instrument makers for the way they allowed surgeons to visit their workshops and see how the instruments were made. It would be beneficial, he thought, if a return visit was made to the surgeons' workshops, the operating theatres, to see what was actually done with the instruments. The association might also with advantage form some sort of museum where the vast stocks of patterns of surgical instruments could be housed and to which those who were thinking of inventing instruments could have access. It might often be found that the instruments they had in mind had already been produced and perfected years before. Mr. Drew, who responded, said that skilfully designed surgical instruments had the happy knack of turning up again and again; it was essential for them to be known by the name of the most recent inventor when they embodied improvements on the original design. Heister, who was born in Frankfurt about 1683, wrote a book on surgery which ran into seven German editions and was adopted for many years as the standard book on surgery in the British army; some of his instruments were still being produced, but were not catalogued under his name. Prof. Turner, he said, was voicing their own ideas in saying that the technician of the future must be much more highly trained than he had been in the past. They had recently formed an institute where it was intended to train the young people who were joining the industry in the basic fields of knowledge where surgeon and instrument maker came into contact. Dr. A. N. Gardner proposed "The Guests," and in responding Sir Frederick Hobday expressed his indebtedness to the industry for collaboration in alleviating the sufferings of animals. Dr. Charles Hill, who also responded, urged the institute to seek admission to the register of auxiliaries compiled by the British Medical Association. Mr. Richard Say, on behalf of the Hospital Saving Association, expressed his appreciation of the good work which the instrument makers were doing in endeavouring to raise the quality of surgical appliances and in protecting the public from the quack advertiser.

The King has given permission to Dr. William Dunlop, lately chief medical officer in the Iraq health service, and Mr. G. S. Woodman, lately chief surgical specialist in the service, to wear the order of Al Rafidain, insignia of the fourth class (civil division), which has been conferred on them by the King of Iraq in recognition of their valuable services to his country.

Manchester Babies' Hospital

The Duchess of York has given permission for this hospital to change its name to the Duchess of York Hospital for Babies in Manchester. The hospital celebrated its twenty-first anniversary this year, and Her Royal Highness visited it last July when she opened the new nurses' home and medical block.

Hull Royal Infirmary

The board of management of this hospital have decided to proceed with a scheme for a new block at Sutton for paying patients. There will be an appeal for funds, but the contributions will be regarded as loans carrying interest. Under its charter the infirmary cannot itself carry this out, and the appeal will probably have to be undertaken by an independent body.

University of Birmingham

A special post-graduate course in neurology for candidates preparing for the diploma in psychological medicine of the conjoint board will be held from May 5th to July 14th on Tuesday afternoons at the General Hospital, the Queen's Hospital, and the Cripples Hospital. The lecturers will be Mr. Beatson Hird (neurological ophthalmology), Prof. P. C. Cloake (neurology), Dr. Keith Thompson (neuro-pathology), Mr. G. P. Mills (neurological orthopædics), and Dr. J. F. Brailsford (radiology of the nervous system). Further particulars may be had from the secretary of the University.

Cleaner Swimming Pools

The Minister of Health has been drawing the attention of local authorities to the necessity for cleanliness in swimming-pools. The official circular (No. 1503) points out that the coming of winter provides an opportunity for ensuring that suitable standards of cleanliness and purity of water are maintained. The report on the Purification of the water of Swimming Baths, published by the Ministry in 1929, is quoted as recommending continuous filtration combined with continuous and accurately controlled chlorination (or other equally effective means of sterilisation). Besides baths and pools in public ownership there are those provided by private owners (e.g., in connexion with road-houses and similar premises), and the circular indicates the statutory powers of control which local authorities can exercise, if need be, over such pools used by the public.

The Irish Free State Medical Union

Our Irish correspondent writes: At the representative meeting of the British Medical Association last July sanction was given to a proposal for the union of the branches of the B.M.A. in the Free State with the Irish Medical Association. The latter body, which had previously given approval of the project, has now passed the necessary legal resolutions for winding-up. Two special general meetings were held on Oct. 16th and 31st, and decisions taken in legal form. It is expected that the new union—the title of which will be "the Irish Free State Medical Union (Irish Medical Association and British Medical Association)"—will come into being on Jan. 1st, 1936. All the members of both associations who are resident in the area under the jurisdiction of the Irish Free State will automatically become the first members. The Union will have complete autonomy within the Irish Free State, but arrangements have been made by which the members will receive the *British Medical Journal*, and the Union will be represented on the council of the Association. Moreover, a member leaving the Irish Free State to reside in Great Britain or in any other area where there is a branch of the B.M.A. will automatically become a member of that association. Conversely, members of the B.M.A. coming from Great Britain or elsewhere will become members of the Union. The first election of officers and committees will take place next summer, the management of the Union in the meantime being by a provisional committee.

OBITUARY

WILLIAM ADAMS FROST, F.R.C.S. Eng.

CONSULTING OPHTHALMIC SURGEON TO ST. GEORGE'S HOSPITAL

THE death of Mr. Adams Frost at 82 years of age marks a breach with the past. Forty years ago he was the best known of British ophthalmologists; he was an original member of the Ophthalmological Society of the United Kingdom and the last survivor in this country of that little group. For many years he had been living in retirement.

William Adams Frost was educated at Kensington Grammar School. His father, Charles Maynard Frost, F.R.C.S., was a London Hospital man, but he was surgeon to the Kensington Dispensary and lived in Ladbroke-square, from which it was a pleasant walk across the park to St. George's, where the son studied medicine and from which he qualified in 1874, becoming house surgeon and demonstrator of anatomy. After post-graduate study in Vienna he took his F.R.C.S. in 1878, and three years later was appointed assistant ophthalmic surgeon to the hospital. In 1892 he succeeded Mr. Brudenell Carter as full surgeon, and remained on the active staff until his retirement in 1906. For much of this time he was also surgeon to the Royal Westminster Ophthalmic Hospital, and ophthalmic surgeon to the Victoria Hospital for Children. At St. George's he lectured on ophthalmic surgery, and he was tireless in giving elementary instruction to students who had no intention of becoming specialists; at the Westminster he made good use of a collection of lantern slides (taken from his atlas) to ground more advanced pupils in the recognition of the normal and abnormal fundus picture. He did not write much but his "Atlas of the Fundus Oculi," which appeared in 1896, was an important contribution to ophthalmic literature; some attempts had previously been made in this direction, but Frost's early training at Moorfields and his later attachment to large ophthalmic hospitals gave him the opportunity of capturing topical and interesting cases at the right moment, and of supervising the artist in order that the essential points might be effectively brought out. The atlas contained all the important forms of disease which the student or practitioner was likely to meet with, and Mr. Frost was happy in his artist, Mr. A. W. Head, whose drawings bore the impress of fidelity. His other publication was a little manual of ophthalmic surgery in which he collaborated with Brudenell Carter, who took the anatomy and physiology, while Frost discussed the diseases of the eye and its setting. The chief value of this book lay in the sections on the refraction of the eye and the correction of errors of refraction which Mr. Frost was one of the first to make clear to the student. He devised a useful artificial eye for the purpose of teaching the use of the ophthalmoscope to students, and his model of ophthalmoscope was in some ways superior to Morton's. The operation of putting a glass globe into Tenon's capsule, after excision of the eye, still bears his name. At the Ophthalmological Society he was twice awarded the Middlemore prize; he was for many years librarian of the Bowman library and vice-president of the society.

Mr. Harold Grimsdale writes: "It was my privilege to be associated with Mr. Frost, as clinical assistant and later as assistant surgeon for many years both at St. George's and at the Royal Westminster. It is not easy to express the great regard I had for him; he was an ideal colleague, always ready to help and to listen to one's difficulties. He criticised but never unkindly. His most marked characteristic was keenness; whatever he took up he enjoyed to the full. Apart from his work, which he loved, he played hard. As a young man he was an enthusiastic cyclist; when motors came in he became an equally enthusiastic motorist. He hunted, played golf and bridge, always putting his whole heart into the matter in hand. In his last years his sight failed, and he who had done so much to help the sight of others himself slowly became blind; but even this tragedy he met courageously. He came constantly to the committee meetings of the Westminster, and by his wise advice and interest did much to make the hospital flourish."

In January, 1881, Mr. Frost married Miss M. D. Anderson, who survives him. There were no children of the marriage.

WILLIAM ARTHUR WINTER, M.D. Dub., F.R.C.P. Irel.

Dr. Winter's death in Dublin last Saturday was unexpected to his friends, few of whom knew that he was not in sound health. He was a Dublin man by birth, being born in the city in 1868, and was educated at Trinity College, Dublin. After graduating in 1891 he was for a few years engaged in general practice in the north of England, after which he returned to Dublin to practise as a physician. He was for some years assistant physician to Dr. Steevens' Hospital, and in 1906 was elected visiting physician to that hospital, a post he held up to his death. He filled various offices in the Royal College of Physicians, and was its president from 1927 to 1930. During the late war he served for a time with the "83 (Dublin) General Hospital" in France, holding the rank of major in the Royal Army Medical Corps.

A careful and conscientious hospital physician, Winter for many years enjoyed a large private practice chiefly of the family type; it was a tribute both to his skill and to his kindliness that he retained his earlier patients through life, and very often their children and grandchildren became his patients also. He was so unassuming that his capacity and dignity as president of the College exceeded the anticipations even of his friends. Only a few weeks ago he proposed the toast of the guests at the St. Luke's Day dinner with neatness, good feeling, and tact. A very "clubbable" man and a bachelor he was held in general affection, his courtesy and willingness to do a favour being patent to all.

SIR THEMISTOKLES ZAMMIT, C.M.G., M.D.

THE death in Malta on Nov. 3rd of Sir Themistokles Zammit, at the age of 72, removes from his native island a wise counsellor who, holding himself aloof from purely party politics, has left a deep impress upon its sociological and academic life; from the world of scientific investigation an outstanding personality; and from a smaller circle, to which he was familiarly known as Tem or Temmy, a loyal and beloved friend.

Born in 1864, Zammit was educated at the Malta University where he pursued the study of medicine, and in due course graduated M.D. in 1889. Attracted by the possibility of devoting himself to analytical chemistry, he applied for, and was appointed in 1891 to, the post of government analyst, which he

held for 30 years. He took up his work in the laboratories of the Public Health Department under the then chief medical officer, Caruana Scicluna, who had himself helped Bruce in his preliminary investigations into the ætiology of Mediterranean fever. At this moment, Captain Hughes, who followed Bruce in the serious study of this disease, stepped into the laboratory, and in his turn received much assistance in his researches from Zammit. From the earliest stages of his government service, Zammit was thus in close touch with the development of our knowledge of undulant fever, a fact which made him a tower of strength to the Mediterranean Fever Commission from 1904 to 1907. The discovery of the elimination of the specific micro-organism of the disease via the milk of the goat was due to him—and the study of means for the prevention of brucella infections afforded him intermittent occupation throughout his life. His numerous publications on the subject are scattered through English, French, and Italian journals; and a note from his pen on the immunisation of the Maltese goat appeared in our own columns only two years ago. Previously to the advent of the Mediterranean Fever Commission he had already made his mark in the investigation of an outbreak of malaria in Malta, which he successfully dealt with by tracing the anopheles to its only habitat in the island—a small but deep valley—and there destroying it.

SIR THEMISTOKLES ZAMMIT

For a period of 25 years Zammit played a very active part in university life. In 1905 he was appointed to the chair of chemistry—a post which he retained until 1920—when he exchanged it for the rectorship of the university, becoming at the same time a member of the Legislative and of the Executive Councils of Malta. These posts he held until 1926, when on retiring from the rectorship he was appointed director of the museum department, and was enabled to give free rein to his antiquarian pursuits. Honours naturally fell to his share. In 1911 he became C.M.G.; in 1919 he received the hon. fellowship of the Royal Anthropological Institute; in 1920 the University of Oxford conferred upon him the degree of D.Litt. (hon. causa); in the same year he was awarded the Mary Kingsley medal of the Liverpool School of Tropical Medicine; and ten years later he was created a knight.

Zammit was indeed a versatile and many-sided person, and whatever study he turned to has been enriched by his work. He was a patient, exact, and logical scientific worker, an erudite archæologist, and an academic dignitary whose sound judgment and logical mind steered the university through many troublous times.

He leaves one son—assistant curator of the museum—and one daughter.

Medical Diary

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, Nov. 12th.
Therapeutics and Pharmacology. 5 P.M. Prof. E. C. Dodds: The Pharmacological Action and Clinical Use of Drugs with a Camphor- and Coramine-like Action.
Psychiatry. 8.30 P.M. Dr. John Brander: The Study of the Human Pituitary in Health and Disease.
WEDNESDAY.
Surgery: Sub-section of Proctology. 5 P.M. Mr. G. Gordon-Taylor: The Complex and Complicated in the Surgery of the Large Intestine (presidential address).
FRIDAY.
Radiology. 8 P.M. for 8.15 P.M. (British Industries House, Marble Arch, W.). Dr. Allibone: Continuously Evacuated X Ray Tubes. Other speakers: Dr. Ralston Paterson, Dr. F. Ellis, and Dr. N. S. Finzi.
Epidemiology and Tropical Diseases. 8.15 P.M. Sir W. Dalrymple-Champneys, Dr. R. Briercliffe, Dr. V. B. Wigglesworth, and Dr. P. H. Manson-Bahr: The Malaria Epidemic in Ceylon, 1934–35 (joint discussion).

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, Nov. 11th.—8 P.M., Clinical Evening.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY.
THURSDAY, Nov. 14th.—8.30 P.M. (at 11, Chandos-street, W.), Dr. J. A. Hadfield: A Contribution to Psychopathology.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Royal Northern Hospital, N.W.
FRIDAY Nov. 15th.—9 P.M., Clinical Evening.

SOUTH-WEST LONDON MEDICAL SOCIETY.
WEDNESDAY, Nov. 13th.—9 P.M. (Bolingbroke Hospital, Bolingbroke-grove, S.W.), Mr. E. T. C. Milligan: Modern Methods and Treatment of Ano-rectal Diseases.

PADDINGTON MEDICAL SOCIETY.
TUESDAY, Nov. 12th.—9 P.M. (Great Western Royal Hotel, W.), Miss M. J. Roxburgh, Miss E. Wetherall, and Miss D. Anderson: Hospital Almoners and the Medical Practitioner.

BIOCHEMICAL SOCIETY.
FRIDAY, Nov. 15th.—4.30 P.M. (Guy's Hospital medical school, S.E.), Short Communications.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION, 11, Chandos-street, W.
FRIDAY, Nov. 15th.—5 P.M. Mr. E. Wilson Hall: Some Problems of the Medical Officer in Private Preparatory Schools.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.
TUESDAY, Nov. 12th.—5 P.M., Dr. J. D. Rolleston: The History of the Acute Exanthemata (last FitzPatrick lecture).
THURSDAY.—5 P.M., Dr. C. G. Seligman, F.R.S.: The Roman Orient and the Far East (Lloyd-Roberts lecture).

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.1.
MONDAY, Nov. 11th to SATURDAY, Nov. 16th. Wed., 8.30 P.M. (1, Wimpole-street, W.), Dame Janet Campbell, Prof. J. M. Munro Kerr, Prof. G. I. Strachan, and Prof. Daniel Dougal: That the present rate of maternal mortality is a discredit for modern obstetrics (open to all members of the medical profession).—INFANTS' HOSPITAL, Vincent-square, S.W. Mon., Wed., and Fri., 8 P.M., Course for the F.R.C.S. (Primary) in anatomy and physiology.—ST. PETER'S HOSPITAL, Henrietta-street, W.C. All-day course in urology.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. All-day course in medicine, surgery, and gynæcology.—Courses and lectures open only to members of the Fellowship.

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Nov. 11th.—3.30 P.M., Dr. Symonds: Intracranial Pressure.
TUESDAY.—3.30 P.M., Dr. Critchley: Epilepsy and Allied Conditions.
WEDNESDAY.—3.30 P.M., Dr. Kinnier Wilson: Clinical Demonstration.
THURSDAY.—3.30 P.M., Dr. Walshe: The Motor System (I.).
FRIDAY.—3.30 P.M., Dr. Bernard Hart: The Psychoneuroses (VI.).
Out-patient clinic daily at 2 P.M.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Nov. 14th.—2 P.M., Mr. A. Simpson Smith: Clinical Cases. 3 P.M., Dr. W. W. Payne: Diabetes (Part III.), Complications and their Treatment.
Out-patient Clinics daily at 10 A.M. and ward visits (except on Wednesdays) at 2 P.M.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE EAR, NOSE, THROAT, AND CHEST, Hardman-street, Deansgate, Manchester.
WEDNESDAY, Nov. 13th.—4.30 P.M., Dr. Vernon Smith: Nasal Polypi.

ST. PAUL'S HOSPITAL, Endell-street, W.C.
WEDNESDAY, Nov. 13th.—4.30 P.M., Mr. Stanford Cade: Radiation in Cancer of the Urinary Tract.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, N.W.
WEDNESDAY, Nov. 13th.—4 P.M., Mr. H. Lawson Whale: Fads and Fancies in Laryngology.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Nov. 11th.—10 A.M., Medical wards and skin clinic. 11 A.M., Surgical wards. 2 P.M., Surgical and gynæcological wards, eye, and gynæcological clinics. 4.15 P.M., Mr. Green-Armytage: Trial Labour *versus* Induction.
TUESDAY.—10 A.M., Medical wards. 11 A.M., Surgical wards. 2 P.M., Throat clinic. 4.15 P.M., Dr. Owen: Hæmorrhage and Jaundice.
WEDNESDAY, 10 A.M.—Children's ward and clinic. 11 A.M., Medical wards. 2 P.M., Eye clinic. 4.15 P.M., Demonstration of eye cases.
THURSDAY.—10 A.M., Neurological and gynæcological clinics. Noon, Fracture clinic. 2 P.M., Eye and genito-urinary clinics.
FRIDAY.—10 A.M., Skin clinic. 2 P.M., Throat clinic. 4.15 P.M., Mr. Vlasto: Pain in the Ear.
SATURDAY.—10 A.M., Medical wards, children's and surgical clinics.
The lectures at 4.15 P.M. are open to all medical practitioners without fee. Operations, medical and surgical clinics daily at 2 P.M.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.
WEDNESDAY, Nov. 13th.—4 P.M. (St. James' Hospital, Ouseley-road, S.W.), Dr. G. Braun: Dr. Lettermann's Foot Corrective System, a biological method.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark Hill, S.E.
THURSDAY, Nov. 14th.—9 P.M., Mr. St. J. D. Buxton: Tubercle of Bones and Joints.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.
TUESDAY, Nov. 12th.—5.30 P.M., Dr. M. T. Morgan: Health Inspection of Meat and Meat Products destined for export in the great abattoirs of South America (Benjamin Ward Richardson lecture).

ST. JOHN CLINIC, Ranelagh-road, S.W.
FRIDAY, Nov. 15th.—4.30 P.M., Dr. Albert Eidinow: Principles of Local and General Light Therapy.

INSTITUTE OF HYGIENE, 28, Portland-place, W.
WEDNESDAY, Nov. 13th.—3.30 P.M., Mr. William Ibbotson: Hygiene of Breathing, Hearing, and Speaking.

LONDON SCHOOL OF DERMATOLOGY, 49, Leicester-square, W.C.
TUESDAY, Nov. 12th.—5 P.M., Dr. H. MacCormac: Malignant Growths of the Skin.
WEDNESDAY.—5 P.M., Dr. I. Muende: Histopathology of Chronic Granulomata.
THURSDAY.—5 P.M., Dr. Hugh Gordon: Cutaneous Affections due to Sunlight.

UNIVERSITY OF SHEFFIELD.
FRIDAY, Nov. 15th.—3 P.M. (Royal Hospital), Dr. C. Gray Imrie: Medical Cases. 3 P.M. (Royal Infirmary), Dr. A. Gurney Yates: Medical Cases. 3 P.M. (Jessop Hospital), Prof. John Chisholm: Gynæcological Cases.
SUNDAY.—10.30 A.M. (Royal Hospital), Dr. C. Gray Imrie: Medical Cases. 10.30 A.M. (Royal Infirmary), Dr. A. Gurney Yates: Medical Cases. Mr. R. St. L. Brockman: Surgical Cases. 10.30 A.M. (Jessop Hospital), Mr. Eric Stacey: Gynæcological Cases.

GENERAL INFIRMARY, Leeds.
TUESDAY, Nov. 12th.—3.30 P.M., Mr. Foster: Epiphora: cases illustrating causation and treatment.

PUBLIC DISPENSARY AND HOSPITAL, Leeds.
WEDNESDAY, Nov. 13th.—4 P.M., Dr. H. H. Moll: Empyema.

ROYAL INFIRMARY, Manchester.
TUESDAY, Nov. 12th.—4.15 P.M., Mr. D. M. Sutherland: Abdominal Injuries.
FRIDAY.—4.15 P.M., Dr. T. H. Oliver: Demonstration of Medical Cases.

ST. MARY'S HOSPITALS, Manchester.
THURSDAY, Nov. 14th.—4.15 P.M. (Whitworth-street West Hospital), Mr. Arnold Jones: The Present Position of the Operation for the Removal of Tonsils and Adenoids.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, Nov. 13th.—4.15 P.M. (Royal Infirmary), Prof. J. A. G. Burton: The Acute Abdomen.

Vacancies

For further information refer to the advertisement columns

Adelaide, South Australia, University and Hospital.—Director of Bacteriology and Pathology.
Assam, India, Welch Presbyterian Mission Hospital, Shillong.—Surgeon.
Babies' Club, Chelsea.—Additional M.O. £1 11*s.* 6*d.*
Barnstaple, North Devon Infirmary.—Res. M.O. At rate of £150.
Bath, Royal United Hospital.—Asst. Hon. M.O. to Physio-Therapy Dept.
Birmingham, Queen's Hospital.—Res. Surg. O. £150.
Bovey Tracey, Hawkmoor Tuberculosis Sanatorium.—Res. M.O. £250.
Brentwood, Essex, High Wood Hospital for Children.—Asst. M.O. £250. Also H.P. At rate of £120.
Brighton, New Sussex Hospital for Women, Windlesham-road.—Hon. Asst. Ophth. Surg. Also H.P. £100.
Buxton Clinic for Rheumatism and Allied Diseases.—H.P. At rate of £150.
Cambridge, Addenbrooke's Hospital.—H.P. At rate of £130.
Cancer Hospital, Fulham-road, S.W.—Res. M.O. £200. Med. Reg. £150. Also H.S. At rate of £100.
Carshalton, Surrey, Queen Mary's Hospital for Children.—H.P. At rate of £120.
Chelsea Hospital for Women, Arthur-street, S.W.—Jun. H.S At rate of £100.
Chester City and County of.—Deputy M.O.H., &c. £500.
City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—Walton Marsh Barnes Research Scholarship, &c. £500.
Constance-road Institution, East Dulwich, S.E.—Asst. M.O. £250.
Croydon General Hospital.—Res. M.O. £200.
Dreadnought Hospital, Greenwich, S.E.—Receiving Room Officer. At rate of £200.
Edinburgh, National Committee for the Training of Teachers.—M.O. and Lecturer on Hygiene for Aberdeen Training Centre. £725.
Egyptian Government.—Principal M.O.H. of Cairo. L.E. 840–984. Also Director, Serum and Vaccine Institute, Cairo. L.E. 840–984.
Fulham Hospital, St. Dunstan's-road, W.—Asst. M.O. £250.
Golden-square Throat, Nose, and Ear Hospital, W.—H.S. £100.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hospital for Sick Children, Great Ormond-street, W.C.—Res. M.O. for Country Branch. At rate of £250. Also Res. Anæsthetic Registrar. At rate of £150.
Hospital for Women, Soho-square, W.—Surgeon in Charge of Out-patients.
Hull Royal Infirmary.—Cas. O. At rate of £150.
Jersey General Hospital and Poor Law Infirmary.—Radiologist. £500.
Leicester, City General Hospital.—Deputy Med. Supt. £500.
Leeds City.—Asst. Clin. Tuber. O. £550.
Leeds, Menston Mental Hospital.—Fifth Asst. M.O. £350.
Liverpool Hospital for Consumption and Diseases of Chest, Mount Pleasant.—Hon. Asst. Physician.
Manchester, Ancoats Hospital.—H.S. to Ear, Nose, and Throat Dept. At rate of £100.
Manchester City.—Asst. Tuber. O. £650.
Manchester Northern Hospital, Cheetham Hill-road.—Res. M.O. £150.
Metropolitan Hospital, E.—Hon. Aural Surgeon.
Mile End Hospital, Bancroft-road, E.—Asst. M.O. £250.
Miller General Hospital, Greenwich-road, S.E.—Cas. O. At rate of £150. Also H.P. and H.S. Each at rate of £100.
Newark General Hospital.—Res. H.S. £175.
New End Hospital, Hampstead, N.W.—Asst. M.O. £250.
Northampton General Hospital.—H.S. At rate of £150.
Norwich, Norfolk and Norwich Hospital.—Cas. O. £120.
Nottingham Children's Hospital.—Res. H.P. At rate of £150.
Nottingham City Hospital.—Res. Surg. O. £350. Also two H.S.'s. Each at rate of £150.
Preston, Biddulph Grange Orthopædic Hospital.—Jun. H.S. At rate of £150.
Princess Elizabeth of York for Children, Shadwell, E.—Res. M.O. £200.
Romford, Oldchurch Hospital.—Jun. Res. M.O. £250.
Royal College of Physicians, Pall Mall East, S.W.—Leverhulme Research Scholarship. £500.
Royal Free Hospital and London School of Medicine for Women, Hunter-street, W.C.—Third Res. Asst. £270. Also Res. Asst. Path. £150. Also Anæsthetist Registrar. £100.
Royal Northern Hospital, Holloway, N.—Second Ophth. Surgeon.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.S. At rate of £100.
St. Mary, Islington, Hospital, Highgate Hill, N.—Asst. M.O. £350.
St. Pancras Hospital, Pancras-road, N.W.—Asst. M.O. £250.
Salisbury General Infirmary.—Res. M.O. £250.
Salvation Army, Mothers' Hospital, Lower Clapton-road, E.—Sen. Res. M.O. £150. Also Jun. Res. M.O. At rate of £80.
Sheffield, Jessop Hospital for Women.—H.S. At rate of £100.
Southampton, Royal South Hants and Southampton Hospital.—H.P. Cas. O. Also H.S. to E.N.T. Dept. and Res. Anæsthetist. Each at rate of £150.
Stafford, Standon Hall Orthopædic Hospital.—H.S. £200.
Sunderland Royal Infirmary.—H.S. and H.P. Each at rate of £120.
Swansea General and Eye Hospital.—Cas. O. At rate of £150–£175.
Talgarth, Breconshire, South Wales Sanatorium.—Asst. Res. M.O. £200.
Taunton and Somerset Hospital.—H.P. and H.S. Each at rate of £100.
Tunbridge Wells, Kent and Sussex Hospital.—Res. Surg. O. £250.
Walsall, Manor Hospital.—Asst. M.O. £350.
West End Hospital for Nervous Diseases, 73, Welbeck-street, W.—Registrar. £200. Also two Hon. Med. Psychologists.
West London Hospital, Hammersmith-road, W.—Physician to X Ray (Therapeutic) and Electrical Depts.
Wimbledon Hospital, Thurstan-road, S.W.—Res. M.O. At rate of £150.
Winchester, Royal Hampshire County Hospital.—H.S. At rate of £125.
Wokingham, Berks, Pinewood Sanatorium.—Asst. M.O. £250.
Wolverhampton, New Cross Hospital.—Asst. Res. M.O. £200.
Woolwich and District War Memorial Hospital, Shooters Hill, S.E.—Two H.S.'s. Each at rate of £100.
Worcester Royal Infirmary.—Hon. Anæsthetist.
York County Hospital.—H.S. to Eye, Ear, Nose, and Throat Dept. Also H.P. Each £150.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Kelso (Roxburgh).

NOTES, COMMENTS, AND ABSTRACTS

THE VACCINATION QUESTION

IN a Chadwick lecture given in London on Nov. 1st Dr. C. Killick Millard, late medical officer of health for Leicester, sought common ground in which opponents and supporters of vaccination may bury their differences. In the past, he said, one either had to believe in vaccination or disbelieve in it, and the result had been a contest of extremes. While his own faith in vaccination, as a means for protecting the individual against small-pox, was as strong and unassailable as ever, he recognised that, as a State institution, for protecting the community, infant vaccination had been largely a failure. The case of this country in 1871–2, and of India to-day, were outstanding illustrations of this. It was lack of sanitation, not of vaccination, which was the true cause of the appalling small-pox mortality which persisted in India. He believed that the medical profession, from Jenner onward, had claimed too much for vaccination, and that vaccination had been credited with having reduced small-pox mortality in this country much more than it had really done. To-day this was being recognised by the medical profession, or at least by medical officers of health, and it could hardly be otherwise, for in spite of continuous and increasing neglect of infant vaccination small-pox mortality had almost disappeared. Until a few years ago it was taught as a cardinal medical dogma that the neglect of infant vaccination entailed serious and imminent risk of small-pox mortality returning. But the city of Leicester had openly abandoned infant vaccination 50 years ago, and there had only been two deaths from small-pox there in the last 30 years. Dr. Millard took the view that the "ultra-mild" form of small-pox seen in this country of late years is a distinct variety which breeds true. This "variola minor" presents quite a different administrative problem from variola major; it is non-fatal, non-disfiguring, non-loathsome. In some ways it is no more serious than vaccination, and no case, he thinks, can be made out for retaining compulsory vaccination merely on account of it. In Dr. Millard's opinion the repeal of the Vaccination Acts is now overdue.

THE LIMITATIONS OF RADIODIAGNOSIS

THE warning that the radiological method is the servant and not the master of the physician is no new one, but Dr. H. A. Christian[1] has illustrated it aptly with some interesting examples of diagnostic difficulties. Severe and persistent backache, for instance, may suggest to the clinician osteoarthritis of the spine or new growth of the vertebræ. The radiologist may report that there is no evidence of new growth or that there is evidence of osteoarthritis, yet neither report is sufficient justification for abandoning a strong clinical suspicion that new growth is present. Pleural fluid, recurring in the absence of cardiac insufficiency, is a very important sign of new growth in the absence of any local X ray evidence. Prolonged fever again may be the only sign of new growth at some time. Often enough indeed, Dr. Christian points out, the X ray diagnosis lags behind the clinical. In abscess of the lung, for example, there may be fever, foul sputum, and physical signs several days before the X ray is able to reveal the abscess cavity with fluid level, because in the earlier stage the cavity is filled with exudate similar to that in the surrounding lung tissue and no contrast is perceptible. There is a similar lag in osteomyelitis and mastoiditis, and the consequences of waiting for X ray confirmation may be very grave. Tubercle bacilli may be found before a radioscopic lesion is present, just as in other cases the X ray may reveal an unsuspected tuberculosis. The wise physician needs no warning of this lag, but there may be practitioners who expect too much from and place far too much reliance on the X ray contribution to the problem of diagnosis.

[1] New Eng. Jour. Med., Sept. 26th, 1935, p. 593.

SMOKE AND THE NATIONAL OUTLOOK

SPEAKING on this subject at a conference held recently in Peterborough, Dr. R. Veitch Clark, medical officer of health for Manchester, said that the unnecessary production of smoke in this country has far-reaching disadvantages to the nation, not only the rough serious damage to physical and mental well-being, but in waste of fuel resources, increased cost of maintenance of buildings, and harm to agriculture. Possibly, however, the atmospheric gloom and dirt associated with smoke, by its influence on the mind, was most damaging of all in its reaction on national movements and national life. Experience showed, Dr. Clark said, that only in the larger areas of local government was smoke control even reasonably possible, and the smoke nuisance should therefore be administratively supervised by joint smoke boards, operating as do river boards, and covering an area large enough to make effective standardisation of smoke emission generally practicable. Such a board would be able to maintain a staff capable of meeting and discussing problems of fuel consumption, both with industrialists and with local authorities responsible for housing and the production of domestic smoke. This coöperative effort would do far more good than any penal legal enactments.

BOMBAY 100 YEARS AGO

Sir Edward West, appointed recorder of Bombay by the Crown in 1822, and afterwards chief justice, set about the reform of the law courts. With no support from the Governor, and met by antagonism from the supreme court and the East India Company's advocates, he pursued his single-minded fight for justice, and became so much beloved by the natives that at his death Hindus, Mohammedans, and Parsees all contributed to found a scholarship in his honour. He was the first judge to sit with a jury which included natives. Dr. F. D. Drewitt has collected and edited his memoirs which now appear in a revised edition[2] including some hitherto unpublished letters from Archdeacon Barnes who accompanied Bishop Heber in Bombay. Dr. Drewitt has a pleasing straightforward style of writing and the addition of passages from Lady West's journal adds to the interest of the book.

A DOCTOR ON SWIMMING

Dr. G. B. Brewster has made eight attempts to swim the Channel. He has described them in a little book[3] which also contains some notes on the health value of swimming and on training for long swims. Written with a naïveté which is by turns charming and irritating, the book reveals a tenacity in the face of difficulties and bad luck worthy, perhaps, of a better cause. To those who are familiar only with the more usual methods of crossing to the Continent, the chief surprise will be the very few days in every year—half a dozen or so—in which an attempt can be made to swim the Channel, and it is no wonder that on those days the beach at Dover should be thick with swimmers and that the boats available to accompany them should "fall to the longest purse." One fact revealed by Dr. Brewster may discourage even the patient and wealthy long distance swimmer: he may be just as sea-sick as on a cross-channel steamer.

[2] Bombay in the Days of George IV. Second edition. By F. Dawtrey Drewitt, M.D., F.R.C.P. London: Longmans, Green and Co., Ltd. 1935. Pp. 342. 10*s.* 6*d.*

[3] My Channel Swimming Adventures. By G. B. Brewster, M.B., Ch.B. London: John Bale, Sons and Danielsson Ltd. 1935. Pp. 71. 2*s.* 6*d.*

SOCIAL SURVEYS

AN inquiry into the aims and scope of British local social surveys, undertaken in order to judge whether or not further surveys should be encouraged, has had as its outcome an informative little book[1] on the local social survey in Great Britain. The author distinguishes between "typical" surveys in which various social conditions (in particular the extent and causes of poverty) are examined in one area as a sample of conditions in the country as a whole, and "regional" and "community" surveys in which stress is laid on the special problems of the area under consideration and an attempt is made to educate local public opinion to tackle these problems. Mr. Wells concludes that the survey has been definitely successful, both in ascertaining facts and in stimulating to activity. He recommends that further survey work should be done particularly in rural areas, and on aspects of social life not already dealt with. It is doubtful whether this book would be very illuminating to a reader unacquainted with any actual survey, but if it sends such a reader to study the surveys themselves that is all to the good. A useful bibliography lists 31 general social surveys, ranging in time from Charles Booth's classical work on London down to the Merseyside and other recent surveys, and also 124 surveys dealing with special topics.

AIR-RAID PRECAUTIONS

SINCE it seems still necessary that the "active" part of the population must spend time and energy in devising schemes for preventing the "passive" part of the population from being blistered, burnt, and asphyxiated from the air, a catechism on gas warfare recently published serves a necessary purpose.[2] Major Hammer answers in clear and simple language questions on the properties of the various poison gases; on protection and decontamination, both personal and collective; on the first-aid treatment and nursing of gas casualties; and on the organisation necessary in an air raid. Two appendices deal respectively with respirator drill and the administration of oxygen, and some blank pages are added for notes—or perhaps for a Last Will and Testament. Without diagrams and fuller explanations or practical demonstrations the book is not complete in itself, but to refresh or clarify the mind of an intelligent civilian who has been through a course of air-raid precautions and first aid for gas casualties it should prove most useful. To instructors and medical men generally it will serve as a reminder of many points easily forgotten. No criticisms of the matter are called for, but in connexion with face wounds and respirators the sentence "care must be taken that padding or bandages do not cause a bad fit" is open to misinterpretation, as is the horrible phrase a "'pussy' discharge."

A USEFUL DIET BOOK

A NOTE from the printers informs us that this diet book[3] has been compiled by Dr. H. S. Pemberton, honorary physician to the David Lewis Northern Hospital, Liverpool, and the preface tells us that the diets and tables contained in it have been used for some years in the wards and dietetic clinic of that hospital. The work appears in such a modest form and the diets are printed with such complete absence of explanatory paragraphs that its essential excellence may be overlooked. But close examination of the volume leads to the conclusion that it epitomises all that can usefully be said about diets at the present time.

A diet must be adapted to the country as well as to the disease and to the individual, and these are essentially practical diets for British people. Dogmatism as to the exact analyses of any diet or even any article of food is always unscientific because items of food must vary considerably in their constitution according to their season and methods of cultivation; with admirable modesty the compilers state that no great accuracy can be claimed for any figure or percentage given in view of the topographical and seasonal variations revealed by analyses of articles of food. We can heartily commend this book to all practitioners who wish to employ dietetics in a practical and scientific manner.

[1] The Local Social Survey in Great Britain. By A. F. Wells. London: George Allen and Unwin Ltd. Published for The Sir Halley Stewart Trust. 1935. Pp. 108. 5s.

[2] A Catechism of Air-raid Precautions. By Norman Hammer, M.R.C.S. With foreword by F. P. Wilson, J.P. London: John Bale, Sons and Danielsson Ltd. 1935. Pp. 99. 1s.

[3] Diet Book of the David Lewis Northern Hospital, Liverpool. Liverpool: Lee and Nightingale (Printers). 1935. Pp. 44. 5s.

Appointments

EVANS, P. J., M.B. Camb., F.R.C.S. Eng., D.O.M.S., has been appointed Assistant Ophthalmic Surgeon to the Birmingham United Hospital for duty at the Queen's Hospital.

WATSON, ROBERT, M.B. Belf., F.R.C.S. Edin., M.C.O.G., Hon. Obstetric Surgeon to the Northampton General Hospital.

Births, Marriages, and Deaths

BIRTHS

ANDERSON.—On Oct. 25th, at Shrewsbury, the wife of Dr. F. A. Anderson, of a son.

KERR.—On Oct. 31st, the wife of J. A. Kerr, M.D., of Lansdowne-avenue, Grimsby, of a son.

ROTHERHAM.—On Oct. 27th, the wife of Dr. E. B. Rotherham, Grimsby, of a daughter.

MARRIAGES

LOW—GEMMILL.—On Oct. 29th, at Merrylea Parish Church, Glasgow, Edward Bruce Low, M.B., Ch.B. Edin., Shoreham-by-Sea, Sussex, to Clair Gemmill, daughter of Mrs. Jessie Biggar, Newlands, Glasgow.

PORTER—STOWELL.—On Nov. 2nd, at the church of St. Cross, Knutsford, Cheshire, T. W. Herdman Porter, B.M. Oxon., M.R.C.S. Eng., only son of Dr. and Mrs. Herdman Porter, of Faversham, Kent, to Pamela, only daughter of Mr. and Mrs. Herbert Stowell, of Knutsford.

RENSHAW—ROLFE.—On Oct. 30th, at the Twickenham Memorial Chapel, Arnold Renshaw, M.D. Lond., of Manchester, to Barbara Joan, elder daughter of the late Edgar C. Rolfe and Mrs. Rolfe, of Sheringham.

TREVOR—BLYTH.—On Oct. 26th, at St. Stephen's Church, Ipswich, David Trevor, M.S. Lond., F.R.C.S. Eng., of London, to Kathleen Fairfax Blyth, niece of Miss Mary Blyth, of Ipswich.

DEATHS

GARDE.—On Oct. 23rd, at Mombasa, Alfred Jervoise Garde, M.B. Dub., Uganda Medical Service, son of Surg. Capt. and Mrs. Garde, of Falmouth, aged 29.

HARKNESS.—On Oct. 26th, Thomas Harkness, M.B. Edin., of Derby, aged 78.

HISLOP.—On Oct. 30th, at Geraldine, Canterbury, New Zealand, Patrick Wood Hislop, M.D. Edin., son of the late J. Fowler Hislop, Castlepark, Prestonpans.

HOLMES.—On Nov. 1st, at Salisbury, Arthur Norman Holmes, M.B. Dub., aged 59.

MORGAN.—On Oct. 30th, at Beckenham, Llewellyn Arthur Morgan, M.D. Durh., M.R.C.S. Eng.

RICHARDSON.—On Oct. 27th, at Portinscale, Keswick, after, a short illness, William George Richardson, M.B. Durh., F.R.C.S. Eng., aged 72.

ROE.—On Nov. 1st, at Shipton-under-Wychwood, Oxford, Edwin E. W. Roe, M.R.C.S. Eng.

SEVI.—On Oct. 24th, 1935, suddenly, Joseph Sevi, M.R.C.S., L.R.C.P. (of Paris and London), docteur en médecine, lauréat de la faculté de médecine de Montpellier, ex-interne en médecine de l'Hôpital Rothschild de Paris. At 104, Cazenove-road, N.16 (formerly of Upper Clapton-road, E.5). Beloved son of Mrs. S. Sevi and the late Rev. M. Sevi. Communications to 48A, Upper Clapton-road, E.5.

THOMPSON.—On Oct. 31st, at a nursing home, London, Charles Herbert Thompson, M.D. Dub., M.R.C.P. Lond., formerly of Harristown, Rathdowney, Queen's Co., Ireland, aged 78.

WINTER.—On Nov. 2nd, at Dublin, William Arthur Winter, M.D. Dub., B.A.O., Physician to Steevens' Hospital, Dublin, ex-President, R.C.P.I.

YOUNG.—On Oct. 30th, at the Essex County Hospital, George Young, M.D. Zurich, and New York State, M.R.C.S. Eng., of Colchester, aged 60.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.